

PROCEEDINGS
OF THE
CALIFORNIA ACADEMY OF SCIENCES
FOURTH SERIES

VOL. XVII, Nos. 11 AND 12, pp. 297-360

MAY 22, 1929

XI

Report of the President of the Academy
for the Year 1928

BY
C. E. GRUNSKY
President of the Academy

XII

Report of the Director of the Museum
for the Year 1928

BY
BARTON WARREN EVERMANN
Director of the Museum

SAN FRANCISCO
PUBLISHED BY THE ACADEMY
1929

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VOL. XVII, Nos. 11 AND 12, pp. 297-360 **MAY 22, 1929**

XI
REPORT OF THE PRESIDENT OF THE ACADEMY
FOR THE YEAR 1928

BY
C. E. GRUNSKY
President of the Academy

The last year's annual report opened with an expression of regret that the excellent work which is being done in the various departments of the Academy is not more fully recognized by the many public-spirited citizens of California who are so circumstanced that they frequently do not know just what use to make of surplus wealth. This statement should again be repeated and later in this report an opportunity will be pointed out which it is hoped will catch someone's fancy.

The membership has not changed materially during the year, being now made up of:

Patrons.....	19
Honorary Members.....	18
Life Members.....	84
Fellows.....	40
Members.....	935
<hr/>	
Total.....	1096

May 22, 1929

On January 1, 1928, the number of members stood at.....	1101
New members added during the year.....	55
Members lost by death.....	22
Members resigned.....	24
Members dropped for non-payment of dues.....	14
	<hr/>
	60
Net loss during the year.....	5
	<hr/>
Leaving the membership on January 1, 1929, at.....	1096

The Academy carries on its list of patrons the following names:

Living

Mr. George C. Beckley	Mrs. Albert Koebele
Dr. Frank E. Blaisdell	Mr. A. Kingsley Macomber
Mr. William B. Bourn	Mr. John W. Mailliard
Hon. William H. Crocker	Mr. Joseph Mailliard
Mr. Peter F. Dunne	Mr. M. Hall McAllister
Dr. Barton Warren Evermann	*Mr. Ogden Mills
Mr. Herbert Fleishhacker	Mr. William C. Van Antwerp
Mr. W. M. Giffard	Mr. Edward P. Van Duzee
Hon. Joseph D. Grant	Dr. E. C. Van Dyke
Mr. Edward Hohfeld	

Deceased

Mr. William Alvord	Mr. James Lick
Mr. Charles Crocker	Mr. Alexander F. Morrison
Mr. John W. Hendrie	Mr. Amariah Pierce
Mr. William F. Herrin	Mr. Ignatz Steinhart
Mr. Henry M. Holbrook	Dr. John Van Denburgh
Mrs. Charlotte Hosmer	

Those who were called by death in 1928 are as follows:

Mr. John B. Badaracco.....	Member.....	February 26, 1928
Mr. M. E. Beall.....	Member.....	September 1928
Mr. J. O. Beebe.....	Member.....	March 12, 1928
Dr. F. B. Carpenter.....	Member.....	July 16, 1928
Mrs. Crawford W. Clarke.....	Life Member...	February 3, 1928
Dr. William Leon Dawson.....	Member.....	April 30, 1928
Dr. Bashford Dean.....	Honorary Member	
		December 6, 1928
Mr. Charles W. Doe.....	Member.....	January 12, 1928
Mr. C. L. Fox.....	Member.....	March 13, 1928

*Deceased January 29, 1929.

Dr. Charles Henry Gilbert.....	Fellow.....	April 20, 1928
Mr. George Herrmann.....	Member.....	September 2, 1928
Mr. Beverly L. Hodghead.....	Member.....	October 16, 1928
Mr. Mark Keppel.....	Member.....	June 16, 1928
Mr. Leverett Mills Loomis.....	Life Member....	January 12, 1928
Mr. Milnotte McCants.....	Member.....	September 4, 1928
Dr. George W. Merritt.....	Member.....	March 8, 1928
Dr. John F. Newson.....	Life Member..	November 1928
Mr. W. W. Sargeant.....	Member.....	December 4, 1928
Mr. E. E. Schmitz.....	Member.....	November 19, 1928
Mr. Gailliard Stoney.....	Member.....	March 6, 1928
Professor Albert Van der Naillen.	Life Member....	October 28, 1928
Mr. H. C. Worth.....	Member.....	June 2, 1928

In the year 1928 eleven free lectures were delivered at the stated meetings of the Academy, as follows:

- JANUARY 4. "Palestine, its People, its Agriculture and its Native Flora." Illustrated. By Dr. W. L. Jepson, Professor of Botany, University of California, Berkeley.
- MARCH 7. "Mount Shasta." Illustrated. By Mr. Pierre J. Denand, Associated Oil Company, San Francisco.
- APRIL 4. "Reminiscences of early Academy days." By President Grunsky, Vice-Presidents Edwards and Von Geldern, Miss Alice Eastwood and others.
- MAY 2. "Nature Study and Education." Illustrated. By Mr. Harold Stein, Educational Director, Boy Scouts of America, San Francisco.
- JUNE 6. "Observations on a recent trip to Europe." By Mr. C. B. Lastreto, San Francisco.
- JULY 5. "The Conservation of Fish and Game in California and the Work of the Associated Sportsmen of California." By Mr. E. R. Kauffman, President-Editor, Pacific Sportsman.
- AUGUST 1. "The Garden of Shakespeare's Flowers in Golden Gate Park." By Miss Alice Eastwood, Curator, Department of Botany, California Academy of Sciences, San Francisco.
- SEPTEMBER 5. "The Captain Hancock Expedition to the Galapagos Islands." Illustrated with moving pictures. By Mr. Joseph R. Slevin, Curator, Department of Herpetology, California Academy of Sciences, San Francisco.

- OCTOBER 3. "California State Parks and Monuments." Illustrated. By Mr. Winfield Scott, Director of Public Relations, Western Division, National Lumber Manufacturers Association.
- NOVEMBER 7. Captain Hancock's Galapagos Motion Pictures.
- DECEMBER 5. "Color Photography." Illustrated. By Mr. C. H. Sawyer, San Francisco.

The Sunday lectures at the Museum of the Academy in Golden Gate Park retain their popularity, and the kindness and good-will of those who contribute of their knowledge and experience on these occasions is sincerely appreciated. The following 32 Sunday lectures were delivered during the year 1928:

- JANUARY 8. "A Geological Trip to the Channel Islands with Notes on Their Relations to the Mainland." Illustrated. By Mr. Leo George Hertlein, Assistant Curator, Department of Paleontology, California Academy of Sciences.
- JANUARY 15. "Mountains and Valleys of Colombia." Illustrated. By Mr. Frank M. Anderson, Honorary Curator, Department of Paleontology, California Academy of Sciences.
- JANUARY 22. "Early Entomologists on the Coast, and the Relation of the California Academy of Sciences to their Work." Illustrated. By Dr. E. C. Van Dyke, Associate Professor of Entomology, University of California, Berkeley.
- JANUARY 29. "Organization and Purposes of the Department of Entomology, California Academy of Sciences." By Mr. E. P. Van Duzee, Curator.
- FEBRUARY 5. "Large and Small Moths." Illustrated. By Mr. Hartford H. Keifer, Assistant Curator, Department of Entomology, California Academy of Sciences.
- FEBRUARY 12. "Organization and Purposes of the Department of Fishes, California Academy of Sciences." By Mr. H. Walton Clark, Assistant Curator.
- FEBRUARY 19. Special Program given by the United States National Park Service. "Cliff Dwellers and other Indian Matters Chiefly from the Standpoint of the Archæologist." By Mr. J. L. Nusbaum, Superintendent, Mesa Verde Park. Other members spoke and stereopticon slides and moving pictures were shown.

- FEBRUARY 26. "Organization and Purposes of the Department of Ornithology and Mammalogy, California Academy of Sciences." By Mr. Harry S. Swarth, Curator.
- MARCH 4. "The Gulls of the San Francisco Bay Region." Illustrated. By Mr. Joseph Mailliard, Curator Emeritus, Department of Ornithology and Mammalogy, California Academy of Sciences.
- MARCH 11. "Arrangement and Care of the Museum Collection of Birds and Mammals, in the California Academy of Sciences." By Mrs. Mary E. McLellan Davidson, Assistant Curator.
- MARCH 18. "Organization and Purposes of the Department of Herpetology, of the California Academy of Sciences." By Mr. Joseph R. Slevin, Curator.
- MARCH 25. "Organization and Purposes of the Steinhart Aquarium of the California Academy of Sciences." By Mr. Alvin Seale, Superintendent.
- APRIL 1. "Collecting Fishes for the Steinhart Aquarium." Illustrated. By Mr. Wallace Adams, Assistant Superintendent of the Steinhart Aquarium.
- APRIL 8. "Circumnavigating Iceland." By Dr. George Haley, Professor of Biology, St. Ignatius College, San Francisco.
- APRIL 15. "Organization and Purposes of the Department of Exhibits, of the California Academy of Sciences." By Mr. Frank Tose, Chief.
- APRIL 22. "Organizations and Purposes of the Library, of the California Academy of Sciences." By Mr. Ignatius McGuire, Assistant Librarian.
- APRIL 29. "Personal Experiences in the Philippines." By Dr. Albert W. Herre, Chief, Department of Fisheries, Bureau of Science, Manila, P. I.
- MAY 6. "Songs of Some California Birds." Illustrated. By Mr. C. A. Harwell, Principal, Thousand Oaks School, Berkeley.
- MAY 13. The California State Floral Society had an exhibit of flowers in the Auditorium of the Academy from May 12 to May 13, open each day from 10 to 5 o'clock.
- MAY 20. "Salt." By Dr. George J. Pierce, Professor of Botany and Plant Physiology, Stanford University.
- MAY 27. "Indians of the Southwest." By Mr. Harold Stein, Education Director, Boy Scouts of America, San Francisco.

- OCTOBER 7. "California's Native Trees, the Crowning Glory of her State Parks." By Dr. W. L. Jepson, Professor of Botany, University of California. Illustrated.
- OCTOBER 14. "Saving the Redwoods." Illustrated. By Mr. J. D. Grant, Chairman, Board of Directors of Save the Redwoods League.
- OCTOBER 21. "The State Park Survey." Illustrated. By Professor H. W. Sheperd, Department of Landscape Design, University of California.
- OCTOBER 28. "The California State Park System." By Colonel Charles B. Wing, Chief, Division of Parks, Illustrated.
- NOVEMBER 4. "State Parks—A Good Investment." By Mr. William E. Colby, Chairman, California State Park Commission. Illustrated.
- NOVEMBER 11. "Western Mountain Scenery." By Mr. Francis P. Farquhar, San Francisco. Illustrated.
- NOVEMBER 18. "The History of the Sierra Nevada." By Mr. Francis P. Farquhar, San Francisco.
- NOVEMBER 25. "Some Problems in Game Conservation." By Dr. H. C. Bryant, Director, Bureau of Education, California Division of Fish and Game, San Francisco. Illustrated.
- DECEMBER 2. "The Sea Lions of the California Coast." Illustrated. By Mr. Paul Bonnot, Assistant, California Fish and Game Commission, San Francisco.
- DECEMBER 9. "Age of Oaks in the Bay Region and Some Reasons why they die." Illustrated. By Dr. James J. W. McMurphy, Assistant Professor of Botany, Stanford University.
- DECEMBER 16. "The Eye: Its Structure and Function." Illustrated. By Dr. F. W. Weymouth, Associate Professor of Physiology, Stanford University.

LIST OF ACADEMY PUBLICATIONS IN 1928

That the Academy is actively prosecuting scientific research is evidenced by its publications. The following have been issued within the year:

OCCASIONAL PAPERS, No. XV.—STUDIES ON MARINE OSTRACODS, PART II, EXTERNAL MORPHOLOGY OF THE GENUS CYTHEREIS WITH DESCRIPTIONS OF TWENTY-ONE NEW SPECIES, by Tage Skogsberg; pp. 1-144, plates 1-6, 23 Text Figures. (Issued August 24, 1928.)

OCCASIONAL PAPERS, No. XVI.—THE AMPHIBIANS OF WESTERN NORTH AMERICA. AN ACCOUNT OF THE SPECIES KNOWN TO INHABIT CALIFORNIA, ALASKA, BRITISH COLUMBIA, WASHINGTON, OREGON, IDAHO, UTAH, NEVADA, ARIZONA, SONORA AND LOWER CALIFORNIA. By Joseph R. Slevin; pp. 1-144, plates 1-23. (Issued September 15, 1928.)

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Vol. XVI, No. 21, pp. 681-684, plates 25 and 26—DESCRIPTION OF A NEW SPECIES OF LIZARD FROM MALPELO ISLAND, by Joseph R. Slevin. (Issued February 28, 1928.)

Vol. XVI, No. 22, pp. 685-688, plates 27 and 28—DESCRIPTIONS OF TWO NEW SPECIES OF FISHES FROM OFF CAPE SAN LUCAS, LOWER CALIFORNIA, by Barton Warren Evermann and H. Walton Clark. (Issued February 28, 1928.)

Vol. XVI, No. 23, pp. 689-698—REPORT OF THE PRESIDENT OF THE ACADEMY FOR THE YEAR 1927, by C. E. Grunsky. (Issued May 22, 1928.)

Vol. XVI, No. 24, pp. 699-758—REPORT OF THE DIRECTOR OF THE MUSEUM FOR THE YEAR 1927. By Barton Warren Evermann. (Issued May 22, 1928.)

Vol. XVI, 1927 to 1928—INDEX TO VOLUME XVI, FOURTH SERIES.

Vol. XVII, No. 1, pp. 1-29, plate 1, 11 text figures—NOTES ON LOWER TERTIARY DEPOSITS OF COLOMBIA AND THEIR MOLLUSCAN AND FORAMINIFERAL FAUNA, by F. M. Anderson. (Issued June 22, 1928.)

Vol. XVII, No. 2, pp. 31-65, 34 text figures—NEW MYCETOPHILIDÆ TAKEN IN CALIFORNIA AND ALASKA, by M. C. Van Duzee. (Issued June 22, 1928.)

Vol. XVII, No. 3, pp. 67-87—A KEY TO THE SPECIES OF EUCALYPTUS GROWN IN CALIFORNIA, by Eric Walther. (Issued June 22, 1928.)

Vol. XVII, No. 4, pp. 89-139—TERTIARY AND PLEISTOCENE MOLLUSCA FROM THE GALAPAGOS ISLANDS, plates 2-7, five text figures. By William Healey Dall and Washington Henry Ochsner. (Issued June 22, 1928.)

Vol. XVII, No. 5, pp. 141-185, plates 8, 9—LAND SHELLS OF THE GALAPAGOS ISLANDS, by William Healey Dall and Washington Henry Ochsner. (Issued June 22, 1928.)

Vol. XVII, No. 6, pp. 187-203, plate 10—WEST AMERICAN MOLLUSCA OF THE GENUS PHASIANELLA, by A. M. Strong. (Issued June 29, 1928.)

Vol. XVII, No. 7, pp. 205-246, plates 11 and 12—SOME PYRAMIDELLIDÆ FROM THE GULF OF CALIFORNIA, by Fred Baker, G. Dallas Hanna and A. M. Strong. (Issued June 29, 1928.)

Vol. XVII, No. 8, pp. 247-251—OCCURENCE OF SOME ASIATIC BIRDS IN ALASKA, by Harry S. Swarth. (Issued July 10, 1928.)

Vol. XVII, No. 9, pp. 253-265, 17 text figures—A COMMENSAL POLYNOID WORM FROM CALIFORNIA, by Tage Skogsberg. (Issued July 10, 1928.)

Vol. XVII, No. 10, pp. 267-295, 26 text figures—STRUCTURE AND BEHAVIOR OF THE AMPHIPOD, POLYCHERIA OSBORNI, by Tage Skogsberg and G. H. Vansell. (Issued July 10, 1928.)

ITEMS OF INTEREST

The Treasurer's report presents the facts relating to the Academy's financial standing. There has, during the year, been a further reduction of the Academy's indebtedness to the Hibernia Savings and Loan Society from \$215,000 to \$205,000. In addition to the \$10,000 payment on capital account which this involved, an investment was made, out of surplus, in 55 shares of American Trust Company stock amounting to \$6,471.50. Otherwise the net income of the Academy has as heretofore been practically all expended in the care and maintenance of its property and in furthering research work and adding to its natural history material.

The Museum of the Academy and the Steinhart Aquarium have been open as usual free to the public every day in the year. Favorable location in Golden Gate Park has resulted in a sustained large attendance. There were 540,702 visitors to the Museum and 956,845 to the Aquarium.

Last year the resignation of Mr. W. W. Sargent, who had long been Secretary of the Board of Trustees, was noted. This year we note with sorrow his name among the members whom the Academy has lost by death. Death has taken, too, Mr. Leverett M. Loomis, who for many years was Curator of the Department of Ornithology, and, later, Director of the Museum, whose valuable services to the Academy in securing exemption from taxation and in securing from San Francisco the right to erect Academy buildings in Golden Gate Park will be recalled by older members. The Academy has had but few members who could claim such unflagging interest in the affairs of the Academy and in the study of birds as Mr. Loomis.

The Diamond Anniversary of the founding of the Academy was celebrated on April 4, 1928. On this occasion there was a reception at the Museum with appropriate addresses by Joseph D. Grant, Vice-President of the Board of Trustees;

Dr. Barton Warren Evermann, Director of the Museum, and the President.

At the regular meeting on the evening of the same day, Reminiscences were indulged in to which there were contributions notably by Vice-President George C. Edwards and Otto von Geldern, and by Miss Alice Eastwood, the President, and others.

It is with no little satisfaction that the fact can be recorded that the President elect of the United States, Herbert C. Hoover, has long been a member of the Academy.

About the middle of the year a munificent offer was made to the Academy by Mr. Leslie Simson of Berkeley, California, which is perhaps best explained by reproducing a statement which has been given wide circulation, but which has not as yet produced any result. This statement is as follows:

"The people of San Francisco, recognizing the high order of the scientific and educational work which is being done by the California Academy of Sciences ever since its organization in 1853, granted the Academy some years ago the right to erect its museum and research buildings in Golden Gate Park. The Academy, without expense to the City, maintains there its Natural History Museum, in a building erected at its own expense, and open every day free to the public.

"The generous bequest to the Academy by the late Ignatz Steinhart has enabled it to add the Aquarium. The City of San Francisco supplies to the Academy the funds which are necessary for the operation of the Aquarium.

"Now another public-spirited citizen comes forward offering to go to Africa to spend about four years there collecting specimens of wild animals for the Academy. He has lived in Africa and is an experienced, skillful hunter of big game. He knows what can be done. He proposes to meet all expenses of the expedition and to have the specimens prepared and shipped from time to time as they become available, and delivered, without cost to the Academy, at San Francisco.

"What he proposes to do would, if an expedition were organized for the purpose, cost the Academy more than half a million dollars. He conditions his proposal upon suitable assurance from the Academy that the material which he furnishes will be properly housed, but he couples this condition with the further offer that if the Academy will accept his

proposition, he will at once place to the credit of the Academy one hundred and fifty thousand dollars as a contribution toward the cost of a suitable addition to the Academy buildings in Golden Gate Park, he to receive income from this sum, however, during his life time.

"The Academy desires to accept this proposition, but is not so circumstanced as to do so without outside help. It would make its tentative acceptance positive, if someone would now come forward with a gift or an endowment of about two hundred thousand dollars. This amount is named as a minimum. It is far short of erecting the housing facilities which are needed for the African Exhibit. It would have to be supplemented with a loan, and even then the Academy would still be far behind what is needed to keep its activities abreast of the growth of the Pacific Slope. The Academy has urgent immediate need for facilities comparable with those which people of means have been or are supplying in all the large American cities.

"New York, for example, has that great institution, the richly endowed American Museum of Natural History, an expedition from which has for some years been in Africa collecting material for habitat groups. Chicago has its Field Museum and is now adding an aquarium. The latter alone will cost about three million dollars, furnished by a public-spirited citizen. Los Angeles already has material on hand for an African Exhibit and is now erecting a building at a cost of about one and one-half million dollars to house the same.

"Some one may be waiting for this opportunity, not alone to establish a personal or family memorial in Golden Gate Park, but also to make available for the furthering of scientific activities the munificent donation of service and financial aid covered by the pending generous offer above explained. This can be done by gift or an endowment, by a trust, or otherwise.

"Further information relating to the activities and aspirations of the Academy will be gladly furnished."

The Committee which has this matter in charge and by whom this circular was issued expressed to the Trustees the conviction that every possible effort should be put forth to

secure such a donation of funds or an endowment as would make the acceptance of Mr. Simson's generous offer possible.

It would be most appropriate for San Francisco to provide the necessary funds and also the funds for an addition to the Steinhart Aquarium which should be provided in the near future. But this would probably involve a bond issue and would take time. Unless some generous friend comes forward and helps out, the offer by Mr. Simson as stated in the circular may have to be declined. This would indeed be unfortunate.

The scientific and other activities of the Academy during the year will be fully reviewed in the Report of the Director of the Museum, and it need only be added that the Curators in charge of the several departments and the Superintendent of the Aquarium may well be proud of the results, achieved with the means at command.

To all who have contributed by giving of their time and knowledge and who, like Mr. Edward Hohfeld, have assisted with advice and to those who have added to the Academy's wealth of natural history and other material the Academy expresses its obligation and appreciation.

The new year is begun with confidence in continued usefulness and the hope and desire for an increasing rate of progress.

XII

REPORT OF THE DIRECTOR OF THE MUSEUM
FOR THE YEAR 1928

BY

BARTON WARREN EVERMANN

Director of the Museum and of the Aquarium

The Annual Report of the Director for the year 1927 was presented to the Academy at the Annual Meeting, February 15, 1928.

The present report sets forth briefly the scientific and educational activities for the calendar year 1928.

PERSONNEL

Only a few changes in the personnel of the Museum and the Aquarium have occurred in the year. Officer Patrick O'Brien, on account of ill health, served as day watch for only a small part of the year. Mr. O'Brien was an efficient and faithful officer who had been detailed to the Academy for many years and everyone at the Museum misses him greatly.

Mr. Ignatius McGuire, assistant librarian, left the Academy May 31, and Mr. Thomas Cowles was appointed June 13 to the vacancy. Mr. Hartford H. Keifer, assistant curator of entomology, resigned August 9 to accept a position with the State Bureau of Plant Quarantine and Pest Control, Sacramento. On November 5, Miss Amy Williamson was appointed an assistant in the Department of Entomology.

Miss Lucie Hicks, office assistant, having gone to the Hawaiian Islands September 18, resigned October 12. Miss Melba Lewis was appointed temporarily to this position September 24 and served until November 30, and was succeeded December 3, by Miss Evelyn Larsen.

Miss Marian Berney assisted in the Department of Botany during the month of July.

The employees of the Museum January 1, 1929, were as follows: Dr. Barton Warren Evermann, Director and Executive Curator of the Museum, and Editor of the Academy

publications; Susie M. Peers, Secretary to the Board of Trustees; Joseph W. Hobson, Recording Secretary of the Academy; Alice Eastwood, Curator, and Kate E. Phelps, assistant, Department of Botany; Edward P. Van Duzee, Curator, Amy Williamson, assistant, Dr. Edwin C. Van Dyke, Honorary Curator, Dr. Frank E. Blaisdell, Research Associate, Walter M. Giffard, Research Associate, and Dr. Frank R. Cole, Associate Curator in Dipterology, Department of Entomology; Frank Tose, Chief, and Russell Hendrick, Clara Tose, and Cecil Tose, assistants, Department of Exhibits; Dr. Barton Warren Evermann, Curator, and H. Walton Clark, Assistant Curator, Department of Fishes; Joseph R. Slevin, Curator, Department of Herpetology; Dr. Walter Kendrick Fisher, Curator, Department of Invertebrate Zoology; Thomas Cowles, Assistant Librarian; Harry S. Swarth, Curator, Mary E. McLellan Davidson, Assistant Curator, and Joseph Mailliard, Curator Emeritus, Department of Ornithology and Mammalogy; Dr. G. Dallas Hanna, Curator, Leo George Hertlein, Assistant Curator, Frank M. Anderson, Honorary Curator, and Dr. Roy E. Dickerson, Research Associate, Department of Paleontology; Constance W. Campbell, stenographer, part time; Evelyn Larsen, office assistant, part time; Raymond L. Smith, general assistant; Mabel E. Phillips, check-room attendant; William C. Lewis, janitor; Hugh Jones, assistant janitor; Johanna E. Wilkens, charwoman; Aris Partidos, Lecture attendant; Frederick C. Kracke, day watch; Archie McCarte, night watch.

The Aquarium staff and employees January 1, 1929, were as follows: Dr. Barton Warren Evermann, Director; Susie M. Peers, Secretary, part time; Constance W. Campbell, stenographer, part time; Evelyn Larsen, office assistant, part time; Alvin Seale, Superintendent; Wallace Adams, Assistant Superintendent; Dora Arnold, doorkeeper; Clynt S. Martin, chief engineer; B. T. Culleton, first assistant engineer; R. J. Fletcher, second assistant engineer; Clyde E. Guidry, chief attendant; Jack Solini, first assistant attendant; L. R. Solini, second assistant attendant; J. N. Angelucci, third assistant attendant; Frank J. Maxwell, relief engineer and attendant; S. J. Shenefield, carpenter and general utility man; Charles W. Hibbard, assistant collector; Patrick O'Neill, janitor; Patrick McArdle, assistant janitor; James Cavanaugh, day watch.

The following changes in the Aquarium personnel occurred in the year:

Mr. Robert J. Lanier, assistant attendant and electrician, resigned February 29, to accept the responsible position of Superintendent of the Shedd Aquarium, Chicago, and Mr. J. N. Angelucci was appointed assistant attendant.

Mr. Chester L. Duncan, assistant collector, resigned February 16, and was succeeded February 18, by Charles W. Hibbard.

COOPERATION WITH PUBLIC AND PRIVATE SCHOOLS, WITH OTHER INSTITUTIONS, AND WITH INDIVIDUALS

The Museum continues its policy of being of service to the public through cooperation with schools both public and private, with other museums and institutions, and with individuals. Our public exhibits are increasing in number each year, and our research collections are receiving important additions from time to time through our own field explorations, through gift, and by purchase.

The number of specialists and others who make use of our research material increases each year. This is particularly true of the departments of Botany, Entomology, Ornithology and Mammalogy, Herpetology and Paleontology.

Study skins of birds and other animals, and specimens in other groups have been loaned from time to time to teachers in the schools of San Francisco, Berkeley, Oakland and elsewhere.

Habitat groups of birds and other animals have been loaned for circulation among the schools of Berkeley and to Castilleja School at Palo Alto.

VISITORS TO THE MUSEUM AND THE AQUARIUM

Visitors to the Museum in 1928 totaled 540,702. While this number is not quite as large as in 1927, it nevertheless is greater than in several previous years. It represents an average daily attendance of 1454.

Visitors to the Aquarium in 1928 totaled 956,845, which is an increase of 91,211 over that for the previous year, and represents an average daily attendance of 2621.

VISITORS TO THE MUSEUM

[illegible]

VISITORS TO THE AQUARIUM

	1923	1924	1925	1926	1927	1928
January.....		82,283	72,153	38,259	44,300	53,454
February.....		119,001	61,213	66,032	39,515	54,105
March.....		88,172	97,986	82,153	58,151	57,083
April.....		83,245	79,021	64,830	65,337	78,735
May.....		97,083	75,187	94,521	87,961	104,230
June.....		112,785	94,717	91,451	70,151	110,206
July.....		145,703	128,261	127,999	142,738	151,881
August.....		148,899	144,208	124,635	115,230	115,915
September.....	29,800	116,032	106,492	86,645	87,909	92,755
October.....	209,671	71,273	72,350	79,108	66,117	51,521
November.....	145,434	67,500	59,074	49,741	44,643	50,554
December.....	96,757	48,376	52,929	48,423	43,582	36,406
Totals for						
the years....	481,662	1,180,352	1,043,591	953,797	865,634	956,845

Grand total since opening of the Aquarium September, 1923..... 5,481,881

SCHOOLS VISITING THE MUSEUM IN 1928

Following is a list of the schools, the grades, teachers, number of pupils, and dates of visits in 1928:

SCHOOLS OF CITY AND COUNTY OF SAN FRANCISCO

DATE		SCHOOL	GRADE	NUMBER	TEACHER
1928				PUPILS	
Jan.	12	Le Conte.....	3A.....	34	Lea Reid
"	21	Boy Scouts.....		45	H. Stein
"	26	Lowell High.....	High 2.....	19	L. M. Elskamp
"	26	Guadalupe.....	4B.....	41	M. Brockkage
"	27	Grattan.....	Nature Club.....	25	Edna Fahey
"	28	Noe Valley Jr. High.....	7th.....	41	H. S. McQuilkin
Feb.	9	Guadalupe.....	3A.....	34	F. Bourne
"	14	Farragut.....	3B.....	36	M. Doody
"	15	Polytechnic High.....	L2.....	18	G. Webster
"	15	Glen Park.....	5B.....	41	J. Hylton
"	20	Golden Gate.....	1B.....	30	Helen Berta
"	21	Guadalupe.....	2B-2A.....	70	C. Sturgeon and B. Clark
Mar.	2	Lincoln.....	1A.....	26	A. O'Connell
"	2	Lincoln.....	1B.....	28	C. R. Murray
"	2	Lincoln.....	1B.....	24	M. Casey
"	8	Farragut.....	2B.....	37	M. McIlvain
"	8	Le Conte.....	1B.....	22	Vera J. Lyon
"	10	Farragut.....	5B.....	20	R. Resch
"	16	Polytechnic.....	L2.....	28	A. Webster
"	17	Parkside.....	Nature Club.....	6	J. Wagener
"	19	Marshall.....	3.....	30	M. Mack
"	20	Guadalupe.....	8A.....	24	K. L. Growney
"	20	Columbus.....	L-H-6.....	50	Shapero, Blumb
"	20	Commodore Sloat.....	3B.....	38	Esther Bahls
"	29	Excelsior.....	3B.....	37	H. Roskamp

SCHOOLS OF CITY AND COUNTY OF SAN FRANCISCO—*Continued*

DATE 1928	SCHOOL	GRADE	NUMBER PUPILS	TEACHER
April 9	Spring Valley.....	Bird and Flower..	22	M. L. Guis
" 2	Pacific Heights.....	5A.....	32	E. Fuller
" 10	E. R. Taylor.....	6B.....	29	H. Teping
" 11	Balboa.....	2A-2B.....	40	L. M. Bujannoff
" 11	E. R. Taylor.....	4B.....	25	E. M. Roth
" 14	Farragut.....	5B.....	11	R. Resch
" 16	Garfield.....	Atypical.....	38	D. B. Thomas
" 18	Guadalupe.....	4A.....	35	C. Papini
" 18	John Muir.....	3A-3B.....	36	Cornelia Barrett
" 19	St. Joseph's Girls.....	9th.....	7	Sister Bernard Mary
" 19	Bernal.....	7-8.....	30	S. M. Gustafson
" 20	Bryant.....	3B.....	28	H. M. Duffy
" 20	Commodore Stockton.....	4A.....	40	R. H. Peabody
" 21	Bryant.....	5B.....	32	A. Hertz
" 24	St. Paul's.....	1-2-3.....	150	Sisters
" 24	Washington.....	6A.....	37	Rose Hagen
" 28	Commodore Stockton.....	Ungraded.....	28	Florence R. McInerney
" 29	Cabrillo.....	Kindergarten....	19	M. Springer
May 2	St. Joseph's.....	8th.....	35	J. B. Praught
" 2	Pacific Heights.....	5B.....	33	R. E. Dreyfus
" 3	Adams.....	1A-1B.....	40	Misses Hurley and Fenn
" 7	Bryant.....	4B.....	44	E. G. Leary
" 7	Hearst.....	1A-1B.....	15	C. Laird
" 9	Monroe.....	8A.....	30	C. A. Davis
" 10	Denman.....	Kindergarten....	30	E. Nolan
" 11	Presentation High.....	2d.....	10	T. McMahon
" 14	Commodore Stockton.....	Ungraded.....	40	A. Barter
" 15	Le Conte.....	3A-3B.....	21	P. Lobingier
" 16	Poly. H. S.....	H. S.....	19	H. J. Wilcox
" 16	Bernal.....	7-8-B.....	20	Olive T. Powell
" 17	Polytechnic.....	H. S.....	12	H. J. Wilcox
" 17	Commodore Stockton.....	6B.....	32	M. Behm
" 17	Polytechnic H. S.....	H. S.....	21	H. J. Wilcox
" 18	Notre Dame.....	5-6.....	65	Sisters of St. Joseph
" 18	Daniel Webster.....	5B.....	38	Mabel J. Ludwig
" 18	Monroe.....	7A.....	76	D. Greenwood and F. Willitt
" 22	St. Vincent de Paul.....	5-6.....	32	Sisters of Charity
" 23	San Miguel.....	5A-5B.....	25	W. Chance
" 23	San Miguel.....	4A-4B.....	26	E. Coffey
" 23	Emerson.....	High 6.....	39	Miss Cheney
" 23	St. Rose Academy.....	4th.....	29	Sister M. Virginia
" 24	Sherman.....	3A.....	25	A. Mitchell
" 24	Denman.....	1B.....	36	N. A. Neumertel
" 25	Junipero Serra.....	4A-4B.....	55	M. Ahlgren and D. Long
" 25	Sarah B. Cooper.....	3A-3B.....	25	Julia Antipa and E. Antipa
" 25	St. Rose Academy.....	7th.....	26	Sister M. Daniel
" 25	Ashbury Heights Academy...	Primary.....	11	Eva A. Bradshaw
" 26	Glenview Jr. High.....	H9.....	20	Miss Friedrich
" 28	St. Boniface.....	3-4-5-6.....	13	Sisters
" 28	St. Rose Academy.....	Second.....	14	Miss Smith
" 31	Taylor.....	2B.....	25	J. Antilla
June 1	Garfield.....	B First.....	27	M. Soule
" 4	Hancock.....	1A-2B.....	46	Misses Cohn and Melnetsky
" 5	Daniel Webster.....	1A-2B.....	52	F. M. Muller and M. Loewi
" 5	Commodore Stockton.....	5A.....	35	Mrs. H. Jacobs

May 22, 1929

SCHOOLS OF CITY AND COUNTY OF SAN FRANCISCO—*Continued*

DATE 1928		SCHOOL	GRADE	NUMBER PUPILS	TEACHER
June	6	R. S. Thornton.....	2nd-3rd.....	29	M. P. Henderson
"	6	Sherman.....	4A.....	29	Annette Schraft
"	6	Hancock.....	First.....	27	A. Aldrich
"	6	Daniel Webster.....	Service Club.....	20	A. G. Prout
"	6	Excelsior.....	4B.....	33	M. O'Shaughnessy
"	6	Argonne.....	5B.....	40	J. Thurber
"	7	Miss Gardis' Kindergarten.....	.....	7	Miss Gardis
"	7	Sherman.....	7B.....	40	Aileen McCarthy
"	7	McKinley.....	First.....	23	L. Nolan
"	8	Guadalupe.....	3B.....	40	G. Gluesing
"	11	Le Conte.....	6B.....	23	Zetta Pegan
"	11	Jean Parker.....	4B.....	29	D. Parker
"	12	Commodore Stockton.....	6B.....	34	L. Brovelli
"	13	Sarah B. Cooper.....	3A-3B.....	50	Misses Meachum and Pillani
"	19	Patrick Henry.....	5A.....	15	A. M. Bryant
"	21	Lona Hazzard.....	All.....	30	Principal and Playground Teachers
Aug.	22	St. Ignatius.....	College.....	37	George Haley
"	29	Raphael Weill.....	3A.....	30	E. La Berge
"	29	Raphael Weill.....	3A-3B.....	34	I. Richartz
Sept.	4	Raphael Weill.....	3A.....	31	I. O'Brien
"	4	Raphael Weill.....	1A.....	21	Dora D. Davis
"	17	Patrick Henry.....	5A.....	24	E. MacLean
"	20	Lowell High.....	Biology 1.....	52	G. Kast
"	20	Guadalupe.....	6B.....	32	Miss T. B. Cummings
"	21	Frank McCoppin.....	6A.....	33	M. M. Johnson
"	21	Excelsior.....	3B.....	34	A. M. O'Leary
"	21	St. Vincent's High.....	Freshman.....	39	Sister M. Aloysius
"	24	Oak Grove.....	6-7-8.....	23	Cleo McCullough
Oct.	4	Redding.....	3B.....	20	G. Gardner
"	4	Commodore Stockton.....	3A.....	30	Florence A. M. Sweeney
"	5	Roosevelt.....	2B-3A-3B.....	36	H. Ekoos
"	6	John Swett Jr. High.....	8A.....	6	H. E. Nicholson
"	9	Raphael Weill.....	5A.....	42	T. McCullough
"	11	Excelsior.....	4B.....	37	Ethel M. Bryant
"	18	Bryant.....	Ungraded.....	24	M. Irwin and D. Doyle
"	19	Glen Park.....	7B.....	28	E. Coller
"	19	Francis Scott Key.....	2B.....	32	C. Bain
"	19	St. Agnes.....	Commercial.....	12	Sisters of Presentation
"	23	Alamo.....	Kindergarten.....	15	D. A. Rathjen
"	25	Frederick Burk.....	4th.....	19	Misses Savia and Conway
"	25	Raphael Weill.....	5A.....	44	L. McCullough
"	25	H. S. of Commerce.....	10th.....	20	G. L. Allen
"	26	Bryant.....	4d.....	28	E. G. Leary
"	31	Patrick Henry.....	1B.....	38	M. Matthaie
"	31	Le Conte.....	4A-4B.....	27	E. I. Daly
"	31	Alamo.....	Kindergarten.....	16	D. A. Rathjen
"	31	St. Ignatius.....	College.....	23	George Haley
"	31	H. S. Commerce.....	10th.....	15	G. L. Allen
Nov.	1	Farragut.....	4A.....	34	E. McKeown
"	2	Glen Park.....	Ungraded.....	13	Gail Harrington
"	6	Columbus.....	6th.....	39	M. Elkins
"	13	Patrick Henry.....	3B.....	30	Miss Windle
"	20	Frank McCoppin.....	7A.....	36	Mrs. Freeman
"	21	Frederick Burk.....	3-4.....	17	Rose Gerson
"	22	Dudley Stone.....	3B.....	33	B. K. Newman

SCHOOLS OF CITY AND COUNTY OF SAN FRANCISCO—*Continued*

DATE 1928	SCHOOL	GRADE	NUMBER PUPILS	TEACHER
Nov. 27	Andrew Jackson.....	1A-1B.....	52	Mrs. Prescott and Mrs. Anderson
" 28	Frank McCoppin.....	4A.....	43	Miss L. Fleming
" 28	Bryant.....	3A.....	30	A. Kammerer
" 20	Parkside.....	7-8.....	20	E. Schmid
Dec. 7	High School of Commerce....	L2.....	20	E. P. Cornell
" 7	Bay View.....	6A.....	38	D. Adelberg
" 11	Grant.....	7B.....	27	May A. Malloy
" 17	State Teachers College.....	Freshman Biology	21	Edith A. Pickard

SCHOOLS OUTSIDE OF SAN FRANCISCO

Jan. 20	Pittsburg.....	High School.....	12	Mildred Bennett
Mar. 2	U. C. Davis.....	General Zoology..	19	Tracy I. Storer
" 3	San Jose.....	Boy Scouts Troop	22	J. Owen Maurice, S. M.
" 3	Univ. of Calif.....	Zoology.....	26	Dr. Grinnell and W. H. Burt
" 16	Gault of Santa Cruz.....	6th.....	35	Edith E. Fikes
" 20	I. O. O. F. Home, Gilroy.....		20	Two Teachers
" 21	Hillsborough.....		34	N. M. Packwood
April 10	St. Clair, Santa Clara.....	8th.....	33	F. H. Biagini
" 13	Pittsburg Grammar.....	7th-8th-9th.....	172	E. Hill, H. Weimar, W. Youngberg
" 13	U. C. Landscape Design.....		7	H. W. Shepherd
" 13	Columbus, Berkeley.....	3-4.....	120	M. S. Suendermann, M. Osbourne, E. L. Fisher, E. Abernathy
" 14	Santa Rosa Jr. High.....	8B.....	8	William C. Larkin
" 21	Alexander Hamilton Jr. High .	49.....	20	Marjorie Harris and M. F. Ashley
" 28	State Orphans Home of I. O. O. F., Gilroy.....		16	Mrs. E. C. Frazee
May 12	San Anselmo.....	5th.....	9	Minnie Legge
" 12	Jefferson Union, Santa Clara Co.....	8th.....	26	Norma Hogg
" 12	Whittier, Berkeley.....	H6.....	24	M. Lobb
" 13	Berkeley Teachers.....	Elementary.....	40	Miss C. A. Paroni
" 19	Washington, Oakland.....		10	Jennie L. Brothers
" 24	Lincoln, Berkeley.....	High 5th.....	33	Edith Bailey
" 26	Tracy Grammar.....	Advanced Orchestra	34	Ernest G. Dobney
" 29	Le Conte, Berkeley.....	High 6th.....	34	R. E. Clayton
" 29	Soscol, Napa Co.....	2-3-6-7.....	9	Daphne M. Harris
" 29	Knighten, Contra Costa.....	7th.....	14	Miss A. M. McKinnon
" 31	Jefferson, Colma.....	4-5.....	26	Hazel A. Madonna
June 2	St. Joseph's, San Jose.....	8th.....	16	Sister Mary Aquinas
" 4	Melrose, Oakland.....	7-8.....	17	M. E. Geary
" 5	Lincoln, Alameda.....	5th.....	20	Ethel Linton
" 6	San Jose High School.....	10A-10B.....	58	Lotta L. Bland
" 6	San Jose High School.....	10A-10B.....	48	Myrtle L. Judkins
" 11	Millbrae.....	1-2-3-4-5-6.....	40	Teacher
" 16	Mayfield.....	30.....	30	E. M. Knight
" 28	University of California.....		45	S. F. Light
Sept. 12	Sunol.....	5-6-7-8.....	30	Bernard Johnson, G. E. Henry
Oct. 5	Corralitos.....	7-8.....	28	C. G. Bradley
" 13	Clawson, Oakland.....	H4th.....	15	Bertha Feibush
" 29	U. C. Davis, Zoology.....	1A.....	27	Dr. Tracy I. Storer

SCHOOLS OUTSIDE OF SAN FRANCISCO—*Continued*

DATE 1928	SCHOOL	GRADE	NUMBER PUPILS	TEACHER
Nov. 3	Sacramento Jr. College.....	Freshman.....	15	A. W. Bell
" 18	U. C. Zoology.....		116	Joseph Dixon
" 25	Tamalpais High.....	Biology.....	24	J. R. Mackie
" 27	Washington.....	Low 6th.....	33	Rose Hagen
Dec. 8	Highland, Oakland.....	6th.....	11	E. A. Peebles
" 13	Burbank Jr. High, Berkeley...	H8.....	25	Myra I. Streightif

SUMMARY

Schools of San Francisco

Total Number of Pupils.....	4363	4363
Total Number of Teachers.....	152	
Total Number of Classes.....	172	

Schools Outside of San Francisco

Total Number of Pupils.....	1509	1509
Total Number of Teachers.....	51	
Total Number of Classes.....	60	
		5872

SCHOOLS VISITING THE AQUARIUM IN 1928

Following is a list of the schools, the grades, teachers, number of pupils, and dates of visits in 1928:

SCHOOLS OF CITY AND COUNTY OF SAN FRANCISCO

DATE 1928	SCHOOL	GRADE	NUMBER PUPILS	TEACHER
Jan. 17	Commodore Sloat.....	5A.....	27	M. d'Erlach
" 17	Troop 20, B. & A.....		23	Harold E. Jonson
" 18	Happy Hours Kindergarten...		8	Miss B. Rogge
" 21	Boy Scouts.....		95	H. Stein
" 26	Lowell High.....	High 2.....	19	L. M. Elskamp
" 26	Guadalupe.....		41	McBrockhage
" 28	Noe Valley Jr. High.....	7th.....	41	Mrs. H. S. McQuilkin
Feb. 14	Farragut.....	3B.....	36	M. Doody
" 21	Guadalupe.....	1B-2B.....	70	C. Sturgeon, B. Clarke
" 21	Cub Pack Boy Scouts.....		20	Harold E. Jonson
" 24	Lowell High.....		24	Mr. Comell
" 20	State Teacher's College.....		24	L. Reid
Mar. 8	Le Conte.....	1B.....	22	Vera J. Lyon
" 9	Polytechnic High.....		9	Mr. Bonson
" 10	Farragut.....	5B.....	20	R. Resch
" 13	Poly. High School.....		11	H. J. Wilcox
" 13	Polytechnic.....		23	H. J. Wilcox
" 14	Polytechnic.....	H.....	20	H. J. Wilcox
" 15	Chinese Baptist Mission.....	First Year English	25	Marguerite A. Colder
" 16	Polytechnic High.....	L2.....	81	A. Webster
" 16	Polytechnic High.....	L2.....	28	A. Webster
" 19	Marshall.....	3.....	30	Mack

SCHOOLS VISITING STEINHART AQUARIUM IN 1928—*Continued*

DATE 1928	SCHOOL	GRADE	NUMBER PUPILS	TEACHER
Mar. 20	Guadalupe.....	8A.....	24	K. L. Growney
" 29	Excelsior.....	3B.....	37	H. Roskamp
" 30	Hamilton Jr. High.....	H9.....	12	M. V. Goldsmith
" 31	Hysino.....	1st.....	76	
April 10	E. R. Taylor.....	6B.....	29	H. Teping
" 10	Pacific Heights.....	5A.....	32	E. Fuller
" 11	Balboa School.....	2A-2B.....	40	Lubov M. Bujannoff
" 13	St. Ignatius College.....	College Soph.....	33	George Haley
" 18	Guadalupe.....	4A.....	35	Cecelia Papini
" 18	John Muir.....	3A-3B.....	36	Cornelia Barrett
" 19	Bernal.....	7-8.....	30	S. M. Gustafson...
" 20	Commodore Stockton.....	4A.....	40	R. H. Peabody
" 20	Bryant.....	3B.....	28	H. M. Duffy
" 20	Bryant.....	5B.....	32	Adele Hertz
" 24	Le Conte.....	1A.....	22	Miss M. McCauley
" 24	St. Paul's.....	1-4-5.....	150	Sisters
" 25	Sunnyside.....	2B.....	29	Miss Bernstein
" 27	Polytechnic H. S.....	H2.....	23	E. Koehler
" 27	Com. Stockton.....	Ungraded.....	29	Florence R. M. Inerney
" 27	Cabrillo.....	Kindergarten.....	19	M. Springer
May 2	Pacific Heights.....	5B.....	33	Miss R. E. Dreyfus
" 3	Adams.....	1A-1B.....	40	Misses Hurley & Fenn
" 4	Grattan.....	2A-2B.....	26	Wilda Holland
" 7	Bryant Cos.....	4B.....	44	E. G. Leary
" 7	Hearst.....	1A.....	16	C. Laird
" 7	Hearst.....	1B-2A.....	28	C. Foley
" 9	Monroe.....	8A.....	30	C. A. Davis
" 10	Denman.....	Kindergarten.....	30	E. Nolan
" 11	Presentation High.....	Second Year.....	10	I. McMahon
" 11	Poly. H. S.....		12	E. Koehler
" 11	Poly. H. S.....		23	E. Koehler
" 12	Jefferson Union.....	8th.....	26	(Miss) N. Hogg
" 14	Commodore Stockton.....	Ungraded.....	40	A. Barter
" 14	Poly. H. S.....		20	E. Koehler
" 15	Kate Kennedy.....	1B-2H.....	38	M. d'Or
" 15	Le Conte.....	3A-3B.....	21	R. Lobingier
" 15	Miss Hamlin's.....	5-7.....	6	Miss Catharine Cox
" 15	Bernal.....	7-8.....	20	O. F. Powell
" 17	Commodore Stockton.....	6B.....	32	Miss M. Behm
" 18	Notre Dame des Victoires.....	5-6.....	65	Sister of St. Joseph
" 18	Daniel Webster.....	5B.....	38	Mabel J. Ludwig
" 18	Monroe.....	7A.....	76	D. Greenwood, F. Willett
" 22	St. Vincent de Paul.....	5-6.....	30	Sister of Charity
" 23	San Miguel.....	4A-4B.....	26	E. Coffey
" 23	St. Rose Academy.....	4th.....	29	Sister M. Virginia
" 23	San Miguel.....	5A-5B.....	25	W. Chauce
" 24	Argonne.....	4A-4B.....	39	E. Duncing
" 24	.....	Ungraded.....	17	M. Carmichael, E. Cunningham, H. Peksen
" 24	Denman.....	1B.....	36	N. A. Neumerkel
" 24	Sherman.....	3A.....	25	Mrs. Mitchell
" 25	Sarah B. Cooper.....	3A-3B.....	25	J. Antipa
" 25	Commodore Stockton.....	4B-5B.....	74	L. Mitchell, J. Koenecke
" 25	Monroe.....	6B-7A.....	73	N. P. Hackley, M. Crane
" 25	Junipero Serra.....	4A-4B.....	55	Misses Ahlgren & Long
" 25	St. Rose Academy.....	7th.....	26	Sister M. Daniel
" 25	Francisco Jr. High.....	L7.....	11	Miss Barber
" 28	St. Boniface.....	3-4-5-6.....	46	Dominican Sisters

SCHOOLS VISITING STEINHART AQUARIUM IN 1928—*Continued*

DATE 1928	SCHOOL	GRADE	NUMBER PUPILS	TEACHER
May 28	St. Rose Academy.....	2nd.....	14	Miss Smith
" 28	Bernal.....	7B.....	30	H. Searight
" 31	Taylor.....	2B.....	25	Mrs. J. Antilla
June 1	Taylor.....	6B.....	27	A. Simonetta
" 1	Garfield.....	B1.....	27	M. Soule
" 1	Edison.....	4A.....	65	C. Reed, R. S. Miller
" 1	Garfield.....	1B.....	30	K. V. V. Smyth
" 4	Hancock.....	1A-2A.....	46	Mrs. Cohn, Miss Mel- netsky
" 5	Pixley Mem. Free Kindergarten.....		5	Mme. Marie Light Plise
" 5	Sherman.....	2A.....	26	R. Brouillet
" 5	Commodore Stockton.....	5A.....	35	H. Jacobs
" 5	Daniel Webster.....	1A-1B.....	52	F. M. Mullen, Miss Loewi
" 5	Jean Parker.....	1A-1B-5B-6A....	100	N. Valsangiacomo, N. Duane, M. Guinasso, R. Crowley
" 5	Excelsior.....	4B.....	33	M. O'Shaughnessy
" 5	Sherman.....	4A.....	29	Annette Schraft
" 6	Daniel Webster.....	Service Club.....	20	Mrs. Pront
" 6	Argonne.....	5B.....	40	Josephine Thurber
" 7	Argonne.....	1B.....	30	Miss A. M. O'Connor
" 7	Argonne.....	1B.....	30	E. L. Woelffel
" 7	Argonne.....	1A.....	22	Mrs. D. LeLande
" 7	McKinley.....	1st.....	23	L. Nolan
" 7	Kindergarten.....		7	Miss Gardis
" 7	Sherman.....	7B.....	40	A. McCarthy
" 8	Guadalupe.....	3B.....	40	G. Gluesing
" 11	Le Conte.....	6B.....	23	Zetta Pegan
" 12	Jean Parker.....	4B.....	29	D. Parker
" 12	Monroe.....	5.....	120	Miss Davini, Miss Bray, Miss Donohue
" 12	Polytechnic.....	Latin Class.....	22	J. L. Dixon
" 13	Sarah B. Cooper.....	3A-3B.....	50	Miss Bellani, Mrs. Meachum
" 27	Ellen Stark Ford Home.....		24	Martha Shaw
" 13	State Teacher's College.....	Nature Study Class	35	Edith A. Pickard
July 18	Telegraph Hill Settlement.....		20	Miss Hamilton
" 19	Homewood Terrace Orphanage	All grades.....	35	Miss Hoffman
Aug. 1	Telegraph Hill Settlement.....		14	V. Hamilton
" 20	Frank McCoppin.....	7B.....	12	Helen Davis
" 29	Raphael Weill.....	2B.....	30	Jean A. Clayton
" 29	Raphael Weill.....	3A.....	30	E. La Berge
" 31	Raphael Weill.....	2A.....	31	Sara R. Meek..
" 31	Raphael Weill.....	2A.....	34	A. J. Johnson
Sept. 4	Raphael Weill.....	1A.....	21	Dora D. Davis
" 4	Raphael Weill.....	3A.....	31	Miss I. O'Brien
" 7	Raphael Weill.....	3B.....	31	M. McCosher
" 13	Raphael Weill.....	4A.....	34	B. G. Dryfoos
" 17	Patrick Henry.....	5A.....	24	E. MacLean
" 20	Guadalupe.....	6B.....	32	L. B. Cummings
" 21	Excelsior.....	3B.....	34	A. M. Oheary
" 22	Vallejo St. Vincent High.....	Freshmen.....	39	Sister Aloysius
" 28	Paul Revere.....	Kindergarten....	48	E. Cartright
Oct. 5	Roosevelt.....	2B-3A-3B.....	36	E. Ekoos
" 6	State Teacher's College.....	Extension Class..	25	Miss Reid
" 9	Raphael Weill.....	5A.....	42	T. McCullough!
" 10	Kiddie Kastle.....	Kindergarten....	18	Miss Rosenthal
" 11	Excelsior.....	4B.....	37	Ethel M. Bryant

SCHOOLS VISITING STEINHART AQUARIUM IN 1928—*Continued*

DATE 1928	SCHOOL	GRADE	NUMBER PUPILS	TEACHER
Oct. —	Lincoln.....	1st.....	60	A. O'Connell
" 15	Farragut.....	Junior Primary...	31	M. Hayes
" 18	Bryant.....	Ungraded.....	24	M. Irwin, D. Doyle
" 19	Francis Scott Key.....	2B.....	32	C. Bain
" 19	Glen Park.....	7B.....	30	E. Coller
" 24	Commodore Stockton.....	A3.....	32	Florence R. McInerney
" 25	Raphael Weill.....	5A.....	42	T. McCullough
" 25	Francisco Jr. High.....	H-8.....	19	H. Gordon
" 25	H. S. Commerce.....	10th.....	20	G. L. Allen
" 26	Bryant.....	4A.....	28	E. G. Leary
" 26	John Muir.....	3A.....	36	F. Bleuler
" 26	Columbus.....	3rd.....	20	Miss E. Dunn
" 30	Le Conte.....	4A-4B.....	26	E. I. Daly
" 30	St. Ignatius College.....	.....	22	George Haley
" 31	Le Conte.....	3A.....	29	Miss Michel
" 31	Patrick Henry.....	1B.....	38	M. Matthais
" 31	H. S. Commerce.....	10th.....	15	G. L. Allen
Nov. 1	Farragut.....	4A.....	34	E. McKeown
" 1	Excelsior.....	2B.....	28	M. R. Rogers
" 2	Glen Park.....	Ungraded.....	13	Gail Harrington
" 2	Bernal.....	8A-8B.....	60	H. Searight, M. Beale
" 6	Columbus.....	6th.....	38	Mrs. Elkins
" 6	S. F. State Teacher's College..	.....	18	Lea Reid
" 6	Le Conte.....	1A.....	21	Vera L. Humphreys
" 9	Le Conte.....	3A.....	30	R. Lobingier
" 23	Frank McCoppin.....	6A.....	35	M. Johnson
" 27	Andrew Jackson.....	1B-1A.....	55	Mrs. Prescott, Mrs. Anderson
" 28	Bryant.....	3A.....	30	A. Mammerer
" 28	Frank McCoppin.....	4A.....	40	L. Fleming
Dec. 7	Parkside.....	7-8.....	25	E. Schmid
" 7	Bay View.....	6A.....	38	D. Aidelberg
" 11	Grant.....	7B.....	27	May A. Malloy
" 17	Wolf Cub Troop 19.....	.....	19	Morris Zutrov, Cubmaster
" 17	State Teacher's College.....	Freshmen Biology	20	Edith A. Pickard
" 18	S. F. Teacher's College.....	Freshmen Biology	40	Edith A. Pickard
" 26	St. Joseph's.....	1-2-3-4.....	50	Sister Esther

SCHOOLS OUTSIDE OF SAN FRANCISCO

Jan. 20	High School, Pittsburg, Cal....	.....	12	Mildred Bennett
Feb. 3	San Jose, Boy Scout Troop 22.	.....	24	J. Aven Hansen, Scoutmaster
" 11	Stanford University, Palo Alto	.....	10	Professor Starks
Mar. 2	Lincoln.....	1A-1B-2A.....	77	Misses A. O'Connell, Casey, Murray
" 3	University of California, Berkeley.....	.....	26	Dr. Joseph Grinnell
" 16	Gault, Santa Cruz.....	6th.....	35	Edith E. Fikes
" 16	Hillsborough Dist., San Mateo Co.....	6-8.....	34	N. M. Packwood
" 20	Columbus, Berkeley.....	H6-L6.....	50	Eva W. Blumb, Florence Shapero
April 10	St. Claire, Santa Clara.....	8th.....	30	Fr. A. Biagini
" 13	Columbus, Berkeley.....	3-4.....	120	M. S. Suenderman, E. Ahernethy, E. L. Lisher, M. Osborne

SCHOOLS OUTSIDE OF SAN FRANCISCO—*Continued*

DATE 1928	SCHOOL	GRADE	NUMBER PUPILS	TEACHER
April 13	Pittsburg Grammar, Pittsburg, Cal.....	7-8-9.....	178	Elroy Hill, Helen Weimar, Willa Youngberg
" 16	Garfield Jr. High, Oakland....	Special.....	38	Mrs. Irene C. Branson
" 21	R. H. Condie, Piedmont.....	Piedmont Boy Pioneers.....	7	2 Leaders
" 21	Alexander Hamilton Jr. High, Oakland.....	H9.....	20	Marjorie Harris
" 24	Washington, Alameda.....	A6.....	37	Rose Hagen, 6 mothers
" 28	State Home for Orphans, Gilroy		18	Mrs. E. C. Frazee
May 2	St. Joseph's, Alameda.....		35	Father Praught
" 5	Berkeley Teacher's School....	11.....	36	Instructor
" 11	Burlingame High.....	Senior.....	12	R. W. Watson
" 12	San Anselmo, Marin Co.....	5th.....	9	Minne Legge
" 12	Whittier, Berkeley.....	H6.....	24	M. Lobb
" 16	Emerson, Berkeley.....	Low 6.....	25	L. G. Rush
" 24	Lincoln, Berkeley.....	H5.....	33	Edith Bailey
" 26	Edgemont, San Bruno.....	5th.....	7	L. Lazzarini
" 26	Glennview Jr. High.....	H9.....	20	Mary Friedrich
" 26	Alviso, Newark, Alameda Co..	8th.....	11	Mrs. E. Madruga
" 26	Tracy Grammar.....	Orchestra.....	33	Ernest G. Dobney, 7 adults
" 29	Knighten, Contra Costa Co.	7-8.....	14	Miss McKinnon
" 31	Jefferson, San Mateo Co.....	4-5.....	26	Hazel A. Madonna
" 31	Washington, Alameda.....	B7-A8.....	56	Miss Anderson, Miss Hamilton
June 2	St. Joseph's, San Jose.....	8th.....	16	Sr. M. Aquinas, S. N. D.
" 5	Jefferson, Colma.....	5-6.....	48	M. Tobias, Miss Belli
" 6	San Jose High.....	10A-10B	106	Misses M. L. Judkins, L. L. Bland
" 6	R. S. Thornton School, Colma	2-3.....	25	M. P. Henderson
" 11	Millbrae, San Mateo.....	1-2-3-4-5-6.....	40	Miss F. Schroter, Miss Farrell
" 16	Mayfield.....	8th.....	30	E. M. Knight
" 26	Stanford University.....	Premedical Students	6	Professor Starks
" 28	University of California.....		45	Prof. S. F. Light
Aug. 1	St. Vincents Orphanage, San Rafael.....		150	
Sept. 12	Sunol Glen School, Sunol....	5-6-7-8.....	30	V. Bernard, Johnson Prisi, Grace E. Henry
" 22	St. Anselm's Junior Y.L.I. No. 1		25	Mrs. Wm. G. Tahy, Di- rector
Oct. 5	Corralitas Union, Santa Cruz Co.....	7-8.....	28	Elma G. Bradley
" 17	Miss Ransom's School, Pied- mont.....	V.....	13	Mrs. Regula Bernays
" 24	St. Mary's High School, Berkeley.....	2d Year.....	25	Brother Michael
" 27	Emerson.....	5-6.....	9	A. Hoag
Nov. 3	Sacramento Junior College, Sacramento.....	Freshmen.....	15	A. W. Bell
" 9	University High School, Oak- land.....	10th-Biology.....	100	Mrs. Ermyn Lucas, Mrs. Jean M. Nelson
" 17	Stanford University.....	Medical Students	16	Professor Starks
" 20	Burbank Junior High, Ber- keley.....	Ungraded.....	11	L. M. Robinson
" 27	Washington, Alameda.....	A-6.....	30	Rose Hagen, 3 mothers

SCHOOLS OUTSIDE OF SAN FRANCISCO—*Continued*

DATE 1928	SCHOOL	GRADE	NUMBER PUPILS	TEACHER
Nov. 30	Burbank Junior High, Berkeley.....	H8.....	22	Mrs. Carrie L. Smith
Dec. 1	Solomi Lodge, Los Angeles... 4 to 7.....		11	James
" 8	Highland, Oakland.....	6th.....	11	E. A. Peebles
" 13	Burbank Jr. High, Berkeley... H8.....		31	Myra I. Steightif
" 22	Ferndale Union High, Ferndale		16	Ernest G. Dobney

SUMMARY

Schools of San Francisco:

Number of Visiting Pupils.....	6087
Number of Visiting Teachers.....	188
Number of Visiting Classes.....	208

Schools Outside of San Francisco:

Number of Visiting Pupils.....	1916
Number of Visiting Teachers.....	70
Number of Visiting Classes.....	81

Total, Pupils.....	8003
Total, Teachers.....	258
Total, Classes.....	289

DEPARTMENT REPORT

DEPARTMENT OF BOTANY

The herbarium now numbers 161,200 mounted specimens, an increase of 10,000 during the year. There are, besides, many duplicates, and the entire collection from the Revilleigedo Islands which is still in the possession of the collector, H. N. Mason, whose report is not yet ready. The rest of the collection from the 1925 expedition of the California Academy of Sciences has been determined by the curator and the results will soon be published. The specimens are in the herbarium and the duplicates distributed.

Several collecting trips were taken by the curator. The first was to Del Norte County, March 20-30, especially to study *Arctostaphylos* in flower and to do general collecting. Thirty-five species were collected with many duplicates. On May 15-19, San Luis Obispo County was explored through the kindness of Mr. Louis and Miss Gertrude Sinsheimer who took me around in their automobile. Seventy-eight species were collected with duplicates and among them several that seem to be undescribed. June 5-15 was spent on a trip to the mountains east of Round Valley, Mendocino County. This was on horseback and to the little explored mountain summits. Two hundred and nine species were collected. A small collection of 37 species was made at Claremont while attending the annual meeting of the Pacific Division of the A. A. A. S. at Pomona College.

The most important trip was in October and November through parts of New Mexico and Arizona by automobile as the guest of Mrs. Charles W.

McKelvey of Boston, Mass., who collected for the Arnold Arboretum of Harvard University. We met at Lamy on the Atchison, Topeka and Santa Fé R. R., and from there went to Santa Fé. This was our center for five days. We then drove to Albuquerque via the Sandia Mountains, and the following day went to the summit, an altitude of 10,400 feet. We then went on to Gallup and spent a day in the Zuñi Mountains. Three hundred and one specimens were collected in New Mexico, several topotypes among them. In Arizona we collected at the Painted Desert, the Meteor Mine, the Petrified Forest, Padre Cañon, and San Francisco Mountain to 11,000 feet elevation. We spent twelve days at the Roosevelt Dam, every day taking a trip to a different locality. Five days were given to the country around Prescott and on the road to Phoenix where we parted November 10. One thousand, one hundred and ten numbers were recorded from Arizona. The collection has all been determined and labelled but is not yet incorporated in the herbarium.

Duplicates have been sent in exchange to the following institutions: 37 to the National Herbarium, Washington, D. C.; 177 to the New York Botanical Garden, Bronx Park, New York; 15 to the Royal Herbarium, Kew, Surrey, England; 26 to the Gray Herbarium, Cambridge, Mass.; 445 to the Field Museum of Natural History, Chicago, Ill.

Specimens have been received in exchange from the following; 95 from the Arnold Arboretum, Jamaica Plain, Mass.; 1075 (625 of which were mounted) from the Gray Herbarium, Cambridge, Mass. This included specimens from the following: Wright, Cuba; Pringle, Mexico; Hayes, Panama; Moore, Venezuela and Bermuda; Berlandier, Texas; Bolander, California, and Palmer, California. Forty genera and 589 species were added to our collection; 345 from Dean E. D. Merrill, University of California, a collection from Southern China made by Major and Mrs. Clemens; 39 from Royal Herbarium, Kew, Surrey, England. This is part of the Schultz collection in South Africa and added eight genera and 35 species; 1453 from Pomona College, Claremont, Calif. This consists chiefly of duplicates from the Jones Herbarium and added two genera and 94 species; 706 from Field Museum of Natural History, Chicago, Ill. This is a duplicate set of the Dr. Gaumer collection in Yucatan and is mounted, but not yet incorporated in the herbarium.

By purchase the following collections have been received: 400 Washington specimens from Wm. Suksdorf, in Bingen, Wash. One new genus and 96 species were added, several being duplicates of his types; 1651 Argentine specimens from S. Venturi, Tecuman, Argentina. These are not yet incorporated in the herbarium and some are undetermined; 1382 Mexican, chiefly from Sinaloa, collected by Mrs. Ynes Mexia, of which 38 genera and 507 species were additions; 25 mosses from A. J. Grout; 46 southern Oregon species from Professor L. F. Henderson, State University, Eugene, Ore.; 100 Hawaiian specimens from Otto Degener, College of Hawaii, Honolulu, of which five genera and 45 species were additions; 709 Chinese plants from E. D. Merrill collected in Fukien Province, China, by Major and Mrs. Clemens, not yet incorporated in the herbarium.

Gifts have been received from the following: Mrs. E. C. Sutcliffe, 700 Lake St., San Francisco, 20 specimens of *Hepaticæ* from Yosemite National Park and 15 received in exchange from the Sullivant Moss Society; E. C. Johnston, Petaluma, Calif., a very complete collection of the plants from the Pribilof Islands

with photographs and plates; Dr. F. E. Blaisdell, his mother's valuable collection of ferns consisting of 200 specimens; J. C. Otis, 4320 First Ave., N. E., Seattle, Wash., a collection of 48 grasses and sedges from Washington, beautifully preserved and named by well-known authorities; from Wm. Vortriede, State Gardener, Sacramento, Calif., 136 specimens from near Sacramento and the Lake Tahoe region; 176 from Sequoia National Park, collected and donated by Mrs. Charles Derby, 488 Route C, San Jose; 241, chiefly exotics, from Golden Gate Park and California gardens from Eric Walther, Golden Gate Park, of which three genera and 54 species were additions.

Twenty-eight fine photographs of rare and beautiful trees on the estate of the late Senator Bard, Berylwood, Hueneme, Ventura Co., donated by Miss Florence Bolton. Lewis Allen, Golden Gate Park, contributed nine exotics from his garden, all new to our collection. Cecil Hart, Montebello, Calif., 13 from southern California for identification. Chester Dudley, Modesto, Calif., 13 Californian species, one a weed not before reported from California; Mildred E. Harter, Lindsay, Calif., 28 from Tulare Co.; H. H. Kiefer, Sacramento, Calif., 11 from Marysville Buttes; Albert B. Reagan, Queets River Day School, Queets, Wash., 10 from Arizona; Mrs. A. F. Rodda, 2616 Sacramento St., San Francisco, 12 from Death Valley; L. S. Smith, Forest Service, Tahoe District, 26 from Tahoe region.

Dr. George Haley, on his trip to Maine during the summer, collected 44 species and many duplicates on Mt. Washington. They are not yet labelled.

Mrs. E. C. Van Dyke made a most interesting collection in southern California, adding 288 specimens and several new to our herbarium. The Academy allowed these two each a small sum to help defray expenses.

The curator continues to give popular lectures to clubs and schools, carries on the California Botanical Club with a meeting or excursion almost every week, also the bimonthly class of gardeners in the evening at the herbarium. A great many specimens are sent for identification from all parts of the State, especially the exotics that are constantly being introduced into the gardens of California.

The exhibition of native plants and the exotics growing out-of-doors is kept up throughout the year by my assistant, Mrs. George H. Phelps. This is one of the most popular features of the Museum and during the year several hundred species are exhibited, labelled with scientific name and the common name if there is one, also the locality from which native species come and the country in the case of the exotic. Besides efficiently looking after this flower show, my assistant mounts all the specimens, distributes them into the herbarium, looks after drying the specimens coming in and in every possible way relieves the curator of much detail herbarium work.

ALICE EASTWOOD, *Curator*.

DEPARTMENT OF ENTOMOLOGY

The year 1928, in the Department of Entomology, saw about the usual number of additions, and the work of assimilation of the accumulated material proceeded about as in the previous year. The accessions to the department number 39,624 specimens, over 16,000 of which comprise the C. L. Fox collection of Hymenoptera, which was received by bequest. Other large items

include 6399 specimens from the Chiricahua Mountains, Arizona, purchased from J. A. Kusche; 1930 from Kern County, California, and 1262 from Austin, Texas, presented by Mr. J. O. Martin; 2957 from China purchased from Mrs. Dora E. Wright; 2094 from southern California presented by Dr. E. C. Van Dyke, and 3779 taken by H. H. Keifer during field work about Oroville, California. These have all been mounted and incorporated into the general collection. In addition to these Dr. Van Dyke added several thousand specimens to his collection of Coleoptera, now a part of the Academy collection, and has obtained from his correspondents a number of valuable paratypes for the Academy collection. A few smaller donations to the Department collection call for particular mention on account of their special value: Dr. Wm. Barnes, of Decatur, Illinois, gave us 269 determined moths to fill in vacancies in the Academy series; Mr. Henry Bird of Rye, New York, 22 *Papaipemas*, about doubling our series in this genus of prettily marked moths, the larvæ of which live as borers in the stems of various species of the larger herbaceous plants; Mr. W. T. Davis of New Brighton, New York, gave us paratypes of four rare western cicadas; Dr. Wm. M. Wheeler of Harvard University gave us 267 ants, representing practically all the varieties known to inhabit the west coast of the United States; Dr. Carl J. Drake gave us 64 determined aquatic Hemiptera, mostly new to our collection; and Mr. S. N. Allman 207 determined insects from Australia, a region but poorly represented in our collection. Other valuable donations to the department were received from friends of the Academy. Mr. Louis S. Slevin gave us 1066 insects, mostly moths, taken at Carmel, California, and including some rare species; Dr. H. E. Nast contributed 1538 insects, mostly moths from Idaho, a most welcome addition to our Lepidoptera collection; Mr. Gorton Linsley, 321 insects of which 200 were European Coleoptera largely new to our collection. Other donations were received from Dr. H. A. Scullen, A. C. Davis; M. C. Van Duzee, and others.

Field work in this department was restricted to the three months of part-time work by Mr. H. H. Keifer about Oroville, California, and two days' work by the Curator at Yorkville, Mendocino County, as the guest of Mr. E. R. Leach.

The death of Mr. C. L. Fox, which occurred in London, England, on March 16, 1928, was a sad loss to the Department of Entomology. For many years he was an active member of the Academy and a most generous contributor to this department. By his will he left his entire collection of Hymenoptera, as already mentioned, to this department of the Academy. Mr. Fox was a tireless and unusually efficient collector and had accumulated these Hymenoptera during the preceding four or five years. He had just begun working up his material and had studied the *Bembecids* and the genus *Pepsis* and had commenced work on the genus *Nomada*, when failing health compelled his return to England where he could be with his relatives. His labors will result in a large addition to the value of the Academy collection of Hymenoptera.

The months of August and September were spent by the curator in the East. He represented the Academy at the Fourth International Entomological Congress at Ithaca, and after the meeting visited many of the larger public and private collections of insects in the East, including those at the Museum of Comparative Zoology at Cambridge, the American Museum of Natural History at New York; the Philadelphia Academy of Natural Sciences, the National

Museum at Washington, the Carnegie Museum at Pittsburgh, the Field Museum at Chicago, the Illinois Natural History Survey Museum of Urbana, the collections at Cornell University at Ithaca, and the Iowa State College at Ames. Among the private collections inspected were those of Dr. Wm. Barnes at Decatur, Illinois, the largest collection of North American Lepidoptera in the world; Mr. H. C. Fall's collection of Coleoptera at Tyngsboro, Mass.; Dr. Wm. M. Wheeler's great collection of ants at Boston, the large Hemiptera collection of Mr. H. G. Barber at Roselle, New Jersey; of J. R. de la Torre Bueno at White Plains, New York and of Dr. H. H. Knight and Dr. Carl J. Drake, at Ames, Iowa. Your curator has returned with the conviction that while some of these eastern collections of insects are larger than that at the California Academy of Sciences, there is none that can surpass it, if indeed, equal it, in its two strongest groups, the west American Coleoptera and the Hemiptera. All of the larger collections mentioned are much ahead of the Academy in equipment, especially in the matter of cases, and many had larger staffs of workers. Apparently, with the more liberal appropriations came a greater diversion of effort into more popular channels, while the smaller funds available at the Academy have been more largely reserved for strictly systematic work.

Mr. H. H. Keifer, who had been with this department of the Academy for about three years, left in August to take a position with the State Department of Agriculture at Sacramento, and Miss Amy Williamson took his place in November. Mr. J. O. Martin worked throughout the year, on part-time, arranging the Academy collection of Coleoptera, with expert advice and help from Dr. E. C. Van Dyke and Dr. F. E. Blaisdell. Thus far, of the beetles over 91,000 specimens from the Van Dyke collection and 15,000 from the Blaisdell collection, with many from the L. S. Slevin and J. O. Martin collections, have been incorporated with the Academy material into the general collection. The curator has spent some time during 1928 arranging the Hemiptera, and thus far has incorporated over 19,000 specimens from his private collection into that of the Academy. In the spring Dr. W. S. Blatchley spent about a month classifying the Academy collection of Orthoptera, but the want of cases made it impossible to proceed with the arrangement of these or the dragonflies or moths, as well as the Hymenoptera and Diptera. Unless more cases are provided soon the work on the Coleoptera and Hemiptera also will be held up. The Department of Entomology is faced with the very serious problem of securing cases for the rich and invaluable collections that have been presented to it by our local specialists. It will hardly do to break faith with those who have given us their valuable private collections with the understanding that they shall be properly arranged and cared for.

E. P. VAN DUZEE, *Curator*.

DEPARTMENT OF EXHIBITS

The Department of Exhibits reports as follows for the year 1928:

The preparation of the collection of salted bird skins from Nunivak Island, commenced last year for the Department of Ornithology, has been completed.

The land and sea iguanas secured on the Hancock Expedition to the Galapagos Islands, and brought back in cold storage, have been skinned and preserved.

Several of the iguanas have been mounted, and most of the accessory material for making habitat groups has been modeled.

Three large whale skulls have been prepared and hung in the whale court.

The collection of birds of Golden Gate Park has been overhauled, some new specimens mounted, and cases have been remodeled to some extent to better adapt them to the requirements of this exhibit. It is hoped to have the collection completed within the coming year.

A collection of birds of California, which are candidates in the competition for a State Bird has been assembled and placed on exhibition in the Bird Hall.

The work of overhauling the entire series of habitat groups has been commenced, and five of the six large groups in the Bird Hall have been completed. In addition, the panel groups adjacent to them have been inspected and placed in excellent condition. This has entailed a considerable amount of work, but the improved appearance of the groups and the knowledge gained in regard to the action of time, light, etc., has made the effort worth while.

In addition to this work a number of wax models of various species of fungi have been made. Most of these are by Miss Clara Tose who has rendered valuable assistance throughout the year.

Mr. Russell Hendrick acted as assistant in exhibits until July, when he left the Academy to attend college. Part time assistance has been given by Cecil Tose after school hours.

From April 30 to June 5, in conjunction with Mr. Joseph Mailliard and with Mr. Russell Hendrick as assistant, an expedition was undertaken to Creston, Kootenay Valley, British Columbia. Valuable additions to the collections of Ornithology and Mammalogy were secured.

FRANK TOSE, *Chief.*

DEPARTMENT OF FISHES

Work upon the Check-List of Fishes of North and Middle America by Jordan, Evermann, and Clark, upon which the authors have been engaged for several years occupied a good deal of time during the year. This consisted chiefly of such routine as numbering of orders, genera and species, verifying references, punctuation, etc.

The study of the collection of Revillagigedo Fishes was practically completed. The species have now been identified, their names entered in the book catalogue and a card catalogue prepared and arranged in alphabetic order, the cards giving information as to where each specimen is to be found in the general collection. A preliminary report was written and is now being elaborated. There are still a few perplexing questions to be solved.

Work with the general collection of fishes continues. The general collection is composed of special collections received from time to time, such as the Chinese fishes reported on by Evermann and Shaw, and the Hawaiian collection of Jordan and Evermann and reported on by them. These were easily disposed of; but there was in addition much miscellaneous material most of which has been arranged in categories for further attention, some of the categories being as follows:

1. Tagged, identified, book-catalogued. A card catalogue was made of these, giving their position on the shelves. As many as will fit into the glass-stoppered

bottles at hand are being transferred. An attempt is being made to find all tagged specimens and treat them similarly.

2. With labels giving identification, locality and date; these to be tagged, entered in book and card catalogued.

3. With only locality and date labels; work on these to be finished.

4. Still others with even fewer data, such as only the field tags. Attempts to be made to unravel these.

The type specimens have been card-catalogued, and all but the photographs have been assembled in one room in the center of the basement of the aquarium. The photographs are stored in a metal filing case in the Director's office.

As time permits, abstracts are being edited or prepared of articles published dealing with the general subject of fishes. As a by-product of this work, a card catalogue of all new genera of fishes published from time to time is being added to the catalogue of genera at hand. It is thus made possible to keep track of current investigations and their results.

Fish breeding with attempts to procure pure pedigreed stock is being continued. The work was first begun for the purpose of obtaining unusually attractive exhibit or aquarium fishes and much toward this end has been achieved. In the meantime, many interesting problems and lines of research have suggested themselves which it would require a special report to deal with adequately.

HOWARD WALTON CLARK, *Assistant Curator*.

DEPARTMENT OF HERPETOLOGY

It became necessary to omit the usual field activities of the department during 1928 owing to the work connected with the publication of the *Amphibians of Western North America*; nevertheless, owing to the generosity of various friends of the Academy the department is able to report very creditable additions to its collections, 1388 specimens having been added during the year.

Gifts of specimens have been received as follows: From F. X. Williams, 1; Miss L. S. Foster, 1; Charles E. Burt, 59; Frank Arundel, 2; Louis S. Slevin, 6; Albert Benstein, 1; L. H. Hodson, 1; Leslie Thompson, 2; Albert E. Colburn, 2; Dr. G. Dallas Hanna, 7; Steinhart Aquarium, 131; Paul D. R. Ruthling, 40; J. R. Chambers, 22; H. Walton Clark, 2; H. Trost, 1; Mrs. Domingo Ghirardelli, 1; E. R. Leach, 1; Frank Tose, 4; T. H. Shaw, 2; Dr. E. C. Van Dyke, 6; L. M. Klauber, 3; D. R. Bull, 2; Russell Hendrick, 1; Walter Bittel, 1; and John K. Strecker, 526.

Specimens have been secured from 23 states as follows: Alabama, 10; Arizona, 1; Arkansas, 48; California, 190; Florida, 7; Georgia, 4; Illinois, 6; Indiana, 1; Kansas, 18; Kentucky, 2; Louisiana, 393; Michigan, 43; Mississippi, 5; Missouri, 43; Nebraska, 4; New Jersey, 3; New Mexico, 3; New York, 12; North Carolina, 62; Ohio, 3; Pennsylvania, 1; Texas, 282; and Utah, 1.

Specimens have been received from other localities as follows: Africa, 4; Argentine Republic, 2; Australia, 17; Brazil, 3; Canada, 3; China, 118; Cocos Island, 1; Cuba 1; Las Tres Marietas Islands, 17; Malpelo Island, 37; and Mexico, 44.

Especially thanks are given Mr. John K. Strecker for his very generous donation of 526 specimens, and to Captain G. Allan Hancock for 43 excellent photo-

graphs of reptile studies, etc., taken by Mr. George E. Stone, photographer of the Hancock Expedition to the Galapagos Islands, in which the department participated.

The opportunity to secure the part-time services of Miss Lucie Hicks for cataloguing and arranging the department library was taken advantage of, with the result that 1382 separates have been bound, numbered, and card-catalogued.

The completion of the installation of the amphibian collection occupied considerable time. 5727 specimens have been checked, card-catalogued, and put into clean bottles and alcohol. In addition to this, 967 lizards and snakes have been labeled, card-catalogued, and permanently installed in the collection.

JOSEPH R. SLEVIN, *Curator*.

DEPARTMENT OF LIBRARY

Due to the unexpected change in administration of the Library in June, the incoming Assistant Librarian was for a time at somewhat of a disadvantage with regard to the general routine in force. Mrs. Davidson, as well as Mr. Van Duzee, was very helpful in acquainting him with the main procedure. The statistical record was not discovered for some time and when found was so obscure that there is no exact report on accessions available. No doubt there was a normal growth of the Library in subscriptions and exchanges; and if a considerable amount of the regular appropriation had not been called upon for transfer to the publications deficit, the purchases of separate titles would also have been quite usual. Exact statistics for the coming year are to be kept for all classes of accessions.

New exchanges during 1928 numbered 25, somewhat fewer than last year; it is planned in 1929 to expand the exchange list systematically as soon as sufficient information concerning institutions and their publications can be obtained. Plans are also under way to check the Library's serial holdings completely, to fill up gaps in incomplete sets as far as possible by exchange, and to compile a want-list of the rest, to be obtained possibly from other libraries in exchange for our duplicates. It is hoped to publish this list of serial holdings, if not as part of the union-list of serials to be issued in the near future by the Special Libraries Association of San Francisco for the holdings in all the special libraries of the city and of the Public Library, then as some sort of supplement to it.

In checking the serial holdings the shelves of the Library will be thoroughly revised. This has not been practicable heretofore on account of their badly crowded condition, which is to be remedied by the installation of temporary wooden shelving. When duplicates and unaccessioned material shall have once been segregated, it will be possible to take a thorough inventory of the Library's collections, a procedure that apparently has not been done since removal to its present quarters.

Relief from excessive crowding in the collection and the comparatively easy accessibility of it will render the completion of the catalogue more or less a matter of routine, to be undertaken in conjunction with the check of the serials. Library of Congress cards will be bought for new accessions so as to make the catalogue as nearly uniform as possible. This project will involve checking and

cataloguing the Department collections as well; none of these has been touched during the year, except that of the Department of Herpetology on which Miss Hicks continued her work of listing separates.

An order file on cards has been instituted and regular forms for entering current serials have been adopted so that an accurate record of current business is immediately available. The work with the Academy's publications has been taken over entirely by Mr. Smith, who had previously assisted in the distributions. Records of distribution and inventories of each separate number published have been started on cards, so that the stock of publications on hand may be easily ascertained.

Miss Arnold has continued to assist part-time in the Library, in putting each day's accessions on the shelf, writing analytic cards for important serials, and in handling secretarial work. Her knowledge of Slavic languages is invaluable. The binding done during the year was meager, partly due to the restriction of funds. Binding is one of the pressing needs of the Library; for lack of it several sets are deteriorating rapidly, and separate numbers, particularly if slight, are especially liable to loss when unbound.

Another pressing need is clerical assistance to take care of general routine duties so that work on bibliographies, systematic examination of booksellers' catalogues, and other constructive projects may be undertaken at no sacrifice of daily routine. An instance of such a project is the check-list of all the Academy's publications which has been started but which can be worked at only fitfully because of the urgency and amount of the routine.

This report is perhaps one more of promise than of performance. If so, it is due to the fact that as far as time permitted the incumbent's attention during his six months in the Library was directed toward a general survey of the state of the Library and to a consideration of its needs for the functions it should fulfill. These needs seem to him to be, primarily, the requirements of the research staff of the Academy; secondarily, those of the membership; finally, those of the community at large for an up-to-date, efficient, and comprehensive scientific library.

THOMAS COWLES, *Assistant Librarian.*

DEPARTMENT OF ORNITHOLOGY AND MAMMALOGY

Accumulated curatorial work and the desirability of pursuing studies upon material in the collection, made it desirable for Curator and Assistant Curator to spend most of the year upon these duties. The Curator has considered it as among his foremost responsibilities to push to completion a report upon the land birds collected upon the Galapagos Islands by the Academy expedition of 1905-1906, and other things have been subordinated to that end. The study is at this time perhaps one-half completed. A report upon the Arizona collections of 1927 has been finished and the paper turned in for publication.¹ Mrs. M. E. Davidson, Assistant Curator, has devoted most of her time to current curatorial duties, of which the cataloguing of specimens and the re-arrangement of parts of the collections have been the most time-consuming. She has also been engaged in a study of a collection of birds from Torres Strait Island and Guadal-

¹This report has been completed and published. See *Proc. Calif. Acad. Sci.*, ser. 4, vol. 18, no. 12, pp. 267-383, plates 27-32, 7 text figures, April 26, 1929.

canar, of the Solomon Group;² and in studies of the Guadalupe Petrel, Northern Elephant Seal,³ and Beaked Whale. Some time, too, has been spent upon various details concerned in the completion of Leverett M. Loomis's "Monograph of the Tubinares." This important study was left perhaps nine-tenths finished at Mr. Loomis's death, and Mrs. Davidson, as the one person who was familiar with his work and with what he had in mind, has undertaken to put the manuscript in shape for the printer. It is of importance to the science of ornithology that this monograph be published.

Mr. Joseph Mailliard, Curator Emeritus, made one field trip, as noted beyond, but otherwise his time has been devoted in great part to the banding of birds, locally. In the vicinity of the Museum he has banded birds assiduously, mostly Nuttall Sparrows, and with interesting results. Recently he has built a bungalow in Marin County, to be used as another base for this work.

The only field work during the year was carried on by Mr. Joseph Mailliard. Together with Mr. Frank Tose and Mr. Russell Hendrick, he spent the time from April 30 to June 5 in the vicinity of Creston, British Columbia, collecting birds and mammals.

Mr. Mailliard and the Curator attended the American Ornithologists' Union Meeting at Charleston, South Carolina, November 19-23. At that meeting the Curator read a paper entitled "A New Bird Family (Geospizidæ) from the Galapagos Islands,"⁴ and he also presented the reel of moving pictures obtained by Mr. Joseph Slevin upon the Galapagos Islands, showing the activities of the Flightless Cormorant and the Penguin.

Mrs. Davidson's work on Mr. Loomis's *Monograph of the Tubinares* necessitated examination of material not in the Academy's collection. In the furtherance of this and other objects, she devoted the month of July to an eastern trip, during which ten days were spent at the American Museum of Natural History, New York, twelve at the United States National Museum, and one day at the Museum of the University of Kansas.

During 1928 there were added to the collection: Birds, 985 study specimens and 89 plumage ornaments; birds' eggs, 17 sets; mammals, 152. The British Columbia trip of Mr. Mailliard and his associates was the most important single accession. Another large addition to the collection was made by exchange with Mr. Griffing Bancroft, of San Diego, whereby the Academy obtained a representative lot of Lower California birds, mostly new to our collection, in return for duplicate eggs that had been held for such exchange purpose.

Details of the several accessions are as follows: Birds. *Gift*: David Barry, Jr., 2; Charles Boatright, 6; F. E. Booth, 2; Daniel B. Bull, 31; Bureau of Biological Survey, 89 (plumage ornaments); R. Cabot, 1; California Fish and Game, 3; Sam Davidson, 2; E. W. Gifford, 7; W. W. Green, 1; H. H. Hunt, 1; C. E. Kruger, 1; John McLaren, 2; Memorial Museum, 1; Harry Meyer, 1; James Moffitt, 1; A. C. Montgomery, 4; T. Mori, 3; J. V. Patton, 8; Warren Phillips, 1; A. W. Robison, 9; Raymond Smith, 1; J. W. Steinbeck, 4; Steinhart Aquarium, 3; Sullivan's Pet Shop, 2. *Expedition*: Russell Hendrick, 6; Joseph

²This study has been completed and published. See Proc. Calif. Acad. Sci., ser. 4, vol. 18, no. 10, pp. 245-260, April 5, 1929.

³This study also has been completed and published. See Proc. Calif. Acad. Sci., ser. 4, vol. 18, no. 9, pp. 229-243, pls. 25, 26, April 5, 1929.

⁴Since published in Proc. Calif. Acad. Sci., ser. 4, vol. 18, no. 2, pp. 29-43, 6 text figs., January 29, 1929.

Mailliard, 392; H. S. Swarth, 14; Frank Tose, 18. *Purchase*: J. A. Kusche, 33; D. M. Gorsuch, 74. *Exchange*: Griffing Bancroft, 272.

Eggs. *Expedition*: Joseph Mailliard, 2 sets; Frank Tose, 15.

Mammals. *Gift*: George E. Bailey, 8; H. Walton Clark, 1; Adolph Holm, 4; Mrs. E. F. Maggio, 1; J. M. Oberman, 1; A. W. Robison, 2; James J. Silvey, 1; Steinhart Aquarium, 4; E. C. Van Dyke, 1. *Expedition*: Russell Hendrick, 1; Joseph Mailliard, 109. *Purchase*: Sam Davidson, 3; J. A. Kusche, 11; H. E. Wilder, 1. *Exchange*: L. M. Huey, 4.

During the past year five new metal storage cases were purchased, enabling a rearrangement of parts of the collection. In particular, a different method of arranging small mammals and their skulls has been inaugurated, entailing tedious labor that has fallen to Mrs. Davidson and which is now nearly accomplished. With the additional cases acquired in the last two years we have been fairly well able to care for incoming specimens, though the collections are by no means satisfactorily arranged. Now, however, with every foot of floor space occupied, we are practically at a standstill, and under present conditions it can not be expected that the collections make any notable growth. This applies to the rooms wherein are placed the cases containing small and medium sized mammals and all the birds, and also, most emphatically, to the store room housing the large mammal skins. This room is crowded to such an extent as to discourage efforts to secure more large mammals. There is literally no more space wherein to store them. Furthermore, this room is not properly placed and protected, and dampness enters to a harmful degree.

The outstanding needs of the department are: (1) Floor space, for storage cases and also for tables or benches to be used in cataloguing, studying and otherwise handling specimens. (2) A new metal-lined storage room for large mammals. (3) An additional assistant, the greater part of whose time could be devoted to field work. These are all essential to the further growth of the department.

HARRY S. SWARTH, *Curator*.

DEPARTMENT OF PALEONTOLOGY

Investigations were carried on in the department almost continuously during 1928 by Mr. F. M. Anderson, Honorary Curator, Mr. L. G. Hertlein, Assistant Curator, and the Curator. This has resulted in very substantial progress being made in the systematic arrangement of parts of the collection and the identification of much hitherto undetermined material. Other portions also of the collection have been studied by outside students among whom should be recorded: Dr. Remington Kellogg; Dr. Alexander Wetmore; Mr. J. W. Gidley; Dr. David Starr Jordan; Mr. U. S. Grant IV; Dr. Fred Baker; Mr. A. M. Strong; Dr. H. A. Pilsbry; Dr. Junius Henderson; Dr. S. Stillman Berry; Dr. Joseph A. Cushman; Mr. C. C. Church; and Mr. W. M. Grant.

The work on the vertebrates and diatoms of the famous deposit at Shark Tooth Hill, Kern County, California, has been practically completed. The identification of the various large collections of west Mexican marine mollusks has progressed through several families, chiefly through the efforts of Messrs. Baker and Strong. The marine Pliocene of San Diego, California, has received much attention from Messrs. L. G. Hertlein and U. S. Grant IV. The comple-

tion of reports on the Tertiary of northern South America by Mr. F. M. Anderson marks the termination of a task begun in 1914. He is continuing with various collections of Cretaceous fossils.

Many important collections of fossils have been made during the year by the staff of the department, and a few others have been purchased. Messrs. Anderson, Hertlein and the writer collected extensively in the Cretaceous in northern California and southern Oregon and in the vicinity of Coalinga. The Tertiary and Quaternary in San Diego, Los Angeles, Monterey, Kern and Fresno counties furnished some valuable material, usually especially selected to fill gaps in the collection on hand. The Associated Oil Company continued to contribute large suites of samples of fossil-bearing sediments secured during the work of exploration for oil. In this manner the Academy has come into the possession of a collection unrivalled in any institution elsewhere in the world.

Mr. Charles H. Sternberg, the veteran fossil hunter, made a trip to central Lower California during the year, and a portion of the collection of Cretaceous mollusks brought back by him was purchased by the Academy; this included some very fine examples of ammonites.

Through donation the Academy received a collection of living mollusks, mostly west American, from Mrs. O. N. Sanford, of San Francisco. This had been assembled by her husband many years ago and contains numerous sets of shells of historic interest.

The heirs of the late D. D. Baldwin, a resident of the island of Maui, Hawaii, presented the Academy with the residue of his famous collection of shells. This so-called "residue" is really of vast proportions; it was received in nine large packing cases which await the receipt of our standard storage cases, before being unpacked. It seems that Mr. Baldwin spent a lifetime gathering this collection and the data recorded with the specimens conform to rigid scientific standards. A very large number of new species were described from it and it is said that a portion of it, included in the donation, was exhibited at the Alaska-Yukon Exposition in Seattle about 1910, where it won a beautiful gold medal. Before his death, Mr. Baldwin divided his collection and willed various portions to several of his relatives. One of these portions was later acquired by the Bishop Museum in Honolulu, but most of the remainder were not removed from the old homestead on Maui until they were packed and shipped to San Francisco.

The Academy is indebted to the following persons for contributing their shares of this magnificent collection: Mrs. J. L. Morrison; Mrs. Lillian B. Atwater; Mr. and Mrs. Duncan B. Murdoch; and Mrs. Winifred B. Weddick.

The task of packing and shipping the collection was placed in the care of Miss Lucie Hicks, formerly of the Academy staff. She has advised that without the aid of the above mentioned donors the undertaking would have been very difficult.

The collection had not been unpacked at the end of the year, so exact data as to its contents must be deferred to a subsequent report. It may be of interest to record at this time, however, that there are very large suites of the beautifully colored tree-dwelling snails of the genus *Achatinella* which was Mr. Baldwin's special love. He was an expert collector and obtained vast numbers of these fine shells in the early days of the settlement of the islands. The clearing

away of the timber for the plantations has of course exterminated many of the most striking forms and they will never be obtainable again.

Outstanding loans of museum material at the end of the year were made to the following workers: A. M. Strong, Los Angeles, Calif.; Dr. Fred Baker, Point Loma, Calif.; Dr. S. Stillman Berry, Redlands, Calif.; Dr. Junius Henderson, University of Colorado, Boulder, Colo.; Bryant Walker, Detroit, Mich.; Dr. Paul Bartsch, U. S. National Museum.

G. DALLAS HANNA, *Curator*.

DEPARTMENT OF STEINHART AQUARIUM

We are glad to be able to report an increase not only in the number of specimens but also in the number of attractive species in the tanks of the Aquarium.

The exhibits now number 8895 specimens representing 363 species, an increase of 141 specimens and 63 species over 1927.

For the first time we are now able to show three tanks devoted exclusively to invertebrates, in which we are showing with good effect an Octopus, many Sea Anemones, Starfishes, Sea Urchins, Nudibranchs, Crabs, and Shellfish of several species. This improvement was made possible by installing a small separate circulating system using unfiltered sea water.

For convenience of comparison with former years we, as usual, group all the animals under the following heads:

Mammals.....	6 specimens of	3 species
Birds.....	2 specimens of	2 species
Reptiles.....	114 specimens of	38 species
Batrachians.....	84 specimens of	11 species
Fishes.....	8493 specimens of	291 species
Invertebrates.....	196 specimens of	18 species
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Grand Total.....	8895 specimens,	363 species

We desire to thank the friends of the Aquarium who gave to the institution during the year 1476 animals, ranging from Jellyfish to Sea Lions and Crocodiles. A complete list of the gifts together with the name and address of each donor will be found in the body of the report.

The Chief Attendant, Mr. Clyde Guidry, reports that the following amounts of food were supplied to the animals during the year: 21,900 pounds of fresh fish; 1872 pounds of beef; 300 pounds of dried shrimp; 936 heads of lettuce, together with other foods making a total of 25,004 pounds.

The Collector, Mr. Chas. Hibbard, reports that 56 collecting trips were made in 1928, the total mileage for the collecting truck being 11,535 miles, and the amount of gasoline used was 630 gallons. The total number of specimens secured was 3089.

A number of very useful books have been added to the Aquarium Library during the year.

The attendance at the Aquarium shows an increase over last year, and the building is too crowded for comfort on Sundays and holidays.

We respectfully suggest the following as desirable improvements for the coming year: That the court in front of the building be properly paved with cement or brick, and that the city be asked to supply the Aquarium with an additional wing for fishes from the tropical Pacific, one room of which could be used for showing the life histories of aquatic and other insects of interest to the public.

ALVIN SEALE, *Superintendent.*

REPORT OF THE COMMITTEE ON CONSERVATION OF WILD LIFE

The annual meeting of the Committee was held February 20, 1929. Brief reports from a number of the Academy's special observers were presented. These reports may be summarized as follows in so far as they relate to the game animals in the various national and state parks:

Yosemite National Park, E. P. Leavitt, Acting Supt.

California Valley Elk (transplanted).....	19
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Sequoia National Park, Col. John R. White, Supt.

Deer (estimated).....	6,000
Black Bear (estimated).....	250

Yellowstone National Park, Horace M. Albright, Supt.

Elk:

Gallatin and Madison herds.....	14,150
Jackson Hole herd.....	12,853

27,003

Buffalo:

Lamar River herd.....	896
Cold and Pelican Creek herds.....	100

996

Antelope	Actual count 526; estimate.....	625
Mountain Sheep	Actual count 170; estimate.....	500
Moose	Actual count 111; estimate.....	650
Mule Deer	Actual count 852; estimate.....	2,000
Black Bear	Actual count 227; estimate.....	350
Grizzly Bear	Actual count 103; estimate.....	140

Zion National Park, E. T. Scoyen, Supt.

Mountain Sheep.....	20
Mule Deer.....	350

Mount McKinley National Park, Henry P. Karstens, Supt.

Caribou.....	100,000
Dall's Mountain Sheep.....	50,000
Moose, increasing.	
Grizzly Bear, increasing.	

Glacier National Park, J. Ross Eakin, Supt.

Moose	Actual count 47; estimate.....	98
Mule Deer	Actual count 337; estimate.....	1,003
White-tail Deer	Actual count 956; estimate.....	1,822
Elk	Actual count 369; estimate.....	468
Mountain Sheep	Actual count 138; estimate.....	274
Mountain Goat	Actual count 162; estimate.....	420
Grizzly Bear	Actual count 32; estimate.....	100
Black Bear	Actual count 101; estimate.....	259

Crater Lake National Park, Charles Goff Thompson, Supt.

Black Bear.....	310
Black-tail Deer.....	3,600
Elk (Montana transplanted).....	18

Note.—These estimates comprise all southern Oregon.

Rocky Mountain National Park, Roger W. Toll, Supt.

Black-tail Deer, estimated.....	3,000
Mountain Sheep, estimated.....	400
Elk, estimated.....	200
Black Bear.....	35

Grand Canyon National Park, M. R. Tillotson, Supt.

Antelope, transplanted from Nevada, count.....	9
Deer, on south rim, estimated.....	320
Mountain Sheep, not reported.	

Miscellaneous Notes

In 1914 and 1915, the California Academy of Sciences, with the cooperation of Miller and Lux, Inc., and the California State Fish and Game Commission, captured and distributed to 19 different state, municipal and private parks in California, 146 California Valley (or Tule) Elk. All were obtained from the Kern County herd that roams over the Buttonwillow ranch of Miller and Lux. No recent reliable reports regarding the results of these transplantings have been received. It is hoped that reliable reports may be forthcoming in time for publication in our 1929 report.

Under the recent state law providing for the establishing of Game Refuges by the State Fish and Game Commission, provision was made for the appointment of an Advisory Committee whose duty it is to examine and recommend to the Commission sites that are suitable for game refuges, public shooting grounds, feeding, resting or breeding grounds for water fowl. This law "authorizes and directs the Commissioners to expend, for a period of five years, beginning January 1, 1928, not less than one-third of all moneys collected annually from the sales of hunting licenses in the purchase, lease or rental, and the development, improvement, maintenance, and administration of land, or land and water, or land and water rights therefor, suitable for game refuges or public shooting grounds, or both, within the State of California. . . ." The same

section also provides for the "appointment of a committee to be known as the game refuge and public shooting grounds advisory committee . . . which shall consist of the Director of the California Academy of Sciences, the Director of the Hooper Foundation for Medical Research of the University of California, and five other members to be appointed by the Fish and Game Commissioners. . . . The game refuge and public shooting grounds advisory committee shall hold meetings and make a survey of the state for the purpose of ascertaining the needs for game refuges and public shooting grounds and shall report its findings to the Fish and Game Commissioners."

The advisory committee has been appointed and consists of the following:

Appointed by the Fish and Game Commissioners:

Nathan Moran, San Francisco, Chairman.
 Jacob Baum, Los Angeles.
 H. L. Betten, San Francisco.
 J. Dale Gentry, San Bernardino, Secretary.
 Manley S. Harris, San Francisco.

Named in the organic act:

Dr. K. F. Meyer, Director, Hooper Foundation.
 Dr. Barton Warren Evermann, Director, California Academy of Sciences.

This committee has had several meetings. The establishment of an Elk Park somewhere in the San Joaquin Valley, preferably as near as possible to the region now frequented by the sole remaining herd is receiving careful consideration. If the Tule Elk is to be saved from total extinction it is essential that an adequate refuge be provided very soon, and it is earnestly hoped the committee and the Fish and Game Commission may not needlessly delay taking the action necessary to provide such a sanctuary.

M. HALL McALLISTER, *Chairman.*

PUBLICATIONS BY THE MUSEUM STAFF IN 1928

The following bibliography lists the papers published in the year 1928 by members of the Museum and Aquarium staffs.

Anderson, F. M.

1. Notes on Lower Tertiary Deposits of Colombia and their Molluscan and Foraminiferal Fauna. <Proc. Calif. Acad. Sci., ser. 4, vol. 17, no. 1, pp. 1-29, pl. 1, 11 text-figs., June 22, 1928.
2. Late Cretacic Fossils from Lower California. <The Pan-American Geologist, vol. L, pp. 283-284, November, 1928.

Davidson, M. E. McLellan.

1. On the Present Status of the Guadalupe Petrel. <Condor, vol. 30, no. 6, pp. 355-356, November, 1928.

Eastwood, Alice.

1. Trees of Mt. Tamalpais Region. <Out-of-Doors, February and March, 1928.
2. Midwinter Flowers on Mt. Tamalpais. <Trails, February, 1928.
3. Violets of Marin County, California. <Trails, March, 1928.
4. Flowers noted on the Trail to Little Carson Creek. <Trails, March, 1928.
5. Annual Report, Department of Botany for 1927. <Proc. Calif. Acad. Sci., ser. 4, vol. 16, no. 24, pp. 736-738, May 22, 1928.

Evermann, Barton Warren.

1. A Review of "An Introduction to Biology" by Alfred C. Kinsey. <Indiana University, Alumni Quarterly, vol. 15, no. 1, pp. 87-89, January, 1928.
2. A Plan for Disaster Preparedness. <Transactions Commonwealth Club of California, vol. 23, no. 4, pp. 69-138, May 15, 1928.
3. Annual Report of the Director of the Museum for 1927. <Proc. Calif. Acad. Sci., ser. 4, vol. 16, no. 24, pp. 699-758, May 22, 1928.
4. The Tule Elk of California. <Society of Engineers Year Book for 1928, no. 3, pp. 20-22, 2 illustrations, November 6, 1928.

Hanna, G. Dallas.

1. [Notes on microscopic fossils of North Colombian Shale]. In F. M. Anderson, "The Marine Miocene deposits of North Colombia." <Proc. Calif. Acad. Sci., ser. 4, vol. 16, no. 3, January 31, 1927, p. 88.
2. Abstract: Hanna, G. D. The photography of small objects. Trans. Amer. Micr. Soc., vol. 46, no. 1, 1927, pp. 15-25. <Biol. Absts., vol. 1, no. 6, October, 1927, p. 774.
3. Abstract: Hanna, G. D. Further notes on *Scaez petroli*. Nautilus, vol. 41, no. 1, 1926, pp. 14-16. <Biol. Absts., vol. 1, no. 6, October, 1927, p. 953.
4. Abstract: Mottram, J. C. On the effects of B-radiation on *Colpidium colpoda* as seen in stained specimens. Journ. Roy. Micros. Soc. vol. 46, no. 11, 1926, pp. 123-126, 4 text-figs. <Biol. Absts., vol. 1, no. 6, October, 1927, p. 819.
5. Abstract: Tolman, C. F. Biogenesis of hydrocarbons by diatoms. Econ. Geol., vol. 22, no. 5, August, 1927, pp. 454-474, pls. 1-5, 1 text-fig. <Biol. Absts., vol. 1, nos. 7-8, November-December, 1927, p. 1200.
6. Abstract: Sprenger, E. Ein Beitrag zur Kenntniss der Diatomeenflora von Böhmen. I. Bacillariales aus der Umgebung von Hirschberg. Naturw. Zeitschrift, Lotos, vol. 74, nos. 10-12, 1926, pp. 183-218. <Biol. Absts., vol. 1, nos. 7-8, November-December, 1927, p. 1182. (Junior author with Joaquin Frenguelli).
7. Abstract: Giaj, Levra Piero. Diatomee della valle d'Aosta. Atti Soc. Ital. Sci. Natur., vol. 65, 1926, pp. 116-122. <Biol. Absts., vol. 1, nos. 7-8, November-December, 1927, p. 1181. (Junior author with Joaquin Frenguelli).

8. Abstract: Gaj, Levra Piero. Diatomee raccolte nell'orto botanico della Università di Genova, pp. 1-12, 2 pls., 1 text-fig., Torino, 1926. <Biol. Absts., vol. 1, nos. 7-8, November-December, 1927, p. 1181. (Junior author with Joaquin Frenguelli).
9. Abstract: Chohnoky, B. v. Ueber die Diatomeen-Assoziationen des Dorfes Szamosfalva bei Kolozsvár [The diatom associations about Szamosfalva in Kolozsvár]. Hedwigia, vol. 66, no. 5, 1926, pp. 283-292, 1 fig. <Biol. Absts., vol. 1, nos. 7-8, November-December, 1927, p. 1005.
10. Abstract: Boyer, C. S. List of Quaternary and Tertiary Diatomaceæ from deposits of southern Canada. Canada Dept. Mines; Victoria Mem. Mus., Mus. Bull. no. 45, Biol. ser. no. 12; pp. 1-26, 1 distrbn. table. November 9, 1926. <Biol. Absts., vol. 1, nos. 7-8, November-December, 1927, p. 1198.
11. Abstract: Becking, L. B., C. F. Tolman, H. C. McMillan, John Field and Tadaichi Hashimoto. Preliminary statement regarding the diatom "epidemics" at Copalis Beach, Washington, and an analysis of diatom oil. Econ. Geol., vol. 22, no. 4, June-July, 1927, pp. 356-368, 11 text figs. <Biol. Absts., vol. 2, nos. 1-2, January-February, 1928, p. 27.
12. Abstract: Hanna, G. D. Paleontology of Coyote Mountain, Imperial County, Calif. Proc. Calif. Acad. Sci., ser. 4, vol. 14, no. 18, March 23, 1926, pp. 427-503, 10 pls., 1 fig. <Biol. Absts., vol. 2, nos. 1-2, January-February, 1928, p. 342.
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15. Abstract: Hanna, G. D. & C. C. Church. A collection of recent foraminifera taken off San Francisco Bay, California. Journ. Paleo., vol. 1, no. 3, 1927 [1928], pp. 195-202. <Biol. Absts., vol. 2, nos. 3-5, March-May, 1928, p. 704. (Senior author with C. C. Church).
16. Means for obtaining data in earth bores. U. S. Patent Office, Patent no. 1,665,058, issued April 3, 1928, pp. 1-5, 1 pl.
17. The riddle of the origin of oil. The Record [Associated Oil Company] vol. 9, no. 4, April, 1928, pp. 6-7, 3 figs.
18. [Annual Report of the] Department of Paleontology [1927]. <Proc. Calif. Acad. Sci. ser. 4, vol. 16, no. 24, May 22, 1928, pp. 745-747. Bibliography, pp. 732-734.
19. An early reference to the theory that diatoms are the source of bituminous substances. <Bull. Amer. Assoc. Petrol. Geol., vol. 12, no. 5, May, 1928, pp. 555-556.
20. Freezing and thawing to disintegrate shales. (Senior author with C. C. Church). <Journ. Paleo., vol. 2, no. 2, June, 1928, p. 131.
21. The Monterey Shale of California at its type locality with a summary of its fauna and flora. <Bull. Amer. Assoc. Petrol. Geol., vol. 12, no. 10, October, 1928, pp. 969-983, pls. 7-10.

22. *Solen novacularis*, a name for an Eocene fossil from California. (Junior author with F. M. Anderson). <The Nautilus, vol. 42, no. 2, October, 1928, pp. 65-66.
23. The age of the diatom-bearing shales at Malaga Cove, Los Angeles County, California. <Bull. Amer. Assoc. Petrol. Geol., vol. 12, no. 11, November, 1928, pp. 1109-1111.

Hertlein, Leo George.

1. *Pecten (Patinopecten) lohri*, new name for *Pecten oweni* Arnold, a Pliocene species from California. <Nautilus, vol. 41, no. 3, pp. 93-94, January, 1928.
2. Preliminary Report on the Paleontology of the Channel Islands, California. <Journal of Paleontology, vol. 2, no. 2, pp. 142-157, plates 22-25, June, 1928.

Mailliard, Joseph.

1. Census of the Birds' Nests in the Music Concourse, Golden Gate Park, San Francisco, California, for 1927. <The Gull, vol. 10, no. 2, February, 1928.
2. Sparrow Hawk trying to fly with dead Quail. <The Gull, vol. 10, no. 3, March, 1928.
3. American Coot defending its Young. <The Gull, vol. 10, no. 8, August, 1928.

Slevin, Joseph R.

1. Description of a New Species of Lizard from Malpelo Island. <Proc. Calif. Acad. Sci., ser. 4, vol. 16, no. 21, pp. 681-684, pls. 25 and 26, February 28, 1928.
2. Annual Report, Department of Herpetology for the year 1927. <Proc. Calif. Acad. Sci., ser. 4, vol. 16, no. 24, pp. 741-742, May 22, 1928.
3. The Amphibians of Western North America. <Occasional Papers, Calif. Acad. Sci., no. 16, pp. 1-152, pls. 1-23, September 15, 1928.

Swarth, Harry S.

1. Winter Birds of California Highways. <National Motorist, vol. 4, no. 9, pp. 6, 23-44, 1 text-figure, February, 1928.
2. Annual Report, Department of Ornithology and Mammalogy for 1927. <Proc. Calif. Acad. Sci., ser. 4, vol. 16, no. 24, pp. 743-745, May 22, 1928.
3. Winter Occurrence of Sierra Nevada Rosy Finch and Black Rosy Finch in California. <Condor, vol. 30, no. 3, p. 191, May, 1928.
4. Review of Taverner's "A Study of *Buteo borealis*, the Red-tailed Hawk, and its varieties in Canada." <Condor, vol. 30, no. 3, pp. 197-199, May, 1928.
5. Occurrence of some Asiatic birds in Alaska. <Proc. Calif. Acad. Sci., ser. 4, vol. 17, no. 8, pp. 247-251, July 10, 1928.
6. A Bush-tit's Nest on a Pedestal. <Condor, vol. 30, no. 6, pp. 359-360, 1 text-figure, November, 1928.

Van Duzee, E. P.

1. Annual Report, Department of Entomology for 1927. <Proc. Calif. Acad. Sci., ser. 4, vol. 16, no. 24, pp. 738-740, May 22, 1927.
2. A Misidentified Hadronema. <Pan-Pacific Entomologist, vol. 4, p. 182, June 26, 1928.
3. Two Interesting Additions to the Hemipterous fauna of California. <Pan-Pacific Entomologist, vol. 4, pp. 190-191, June 26, 1928.
4. Our First Rhyparochromus. <Pan-Pacific Entomologist, vol. 5, p. 47, July 28, 1928.
5. A Rare Pentatomid. <Pan-Pacific Entomologist, vol. 5, p. 52, December 28, 1928.

ACCESSIONS TO THE MUSEUM AND LIBRARY

Following is a list of the more important accessions to the Museum and Library received in 1928:

Adams, Charles C., Director New York State Museum, Albany, N. Y.: New York State Museum Handbook, nos. 1-4. Gift.

Adams, Wallace, Steinhart Aquarium, San Francisco: 20 numbers of Tycos-Rochester; California Fish and Game, vol. 4, no. 3, vol. 6, no. 1; 6 U. S. Geological Survey topographic maps; and 36 specimens of fishes, *Agosia nevadensis* from Burrill's Ranch, 9 miles north of Beatty, Nevada. Gift.

Allen, Lewis, Golden Gate Park, San Francisco: 9 specimens of exotic plants. Gift.

Allman, S. L., University of California, Berkeley: 207 Australian insects. Gift.

American Council of Learned Societies, 907 Fifteenth St., Washington, D. C.: 1 copy, American Council of Learned Societies, Bull. no. 8, Oct., 1928. Gift.

American Museum of Natural History, New York: 2 copies, An efficient and safe degreasing tank for Bones, by James L. Clark. Gift.

Anderson, Frank M., California Academy of Sciences, San Francisco: 15 publications of American Institute of Mining Engineers Year-book, vol. 13, 1927, of Geological and Mining Society of American Universities, Stanford Section. Gift.

Anderson, Robert Van Vleck, Menlo Park, Calif.: Two publications on geology. Gift.

Arundell, Frank, Fillmore, Calif.: 1 tree toad, *Hyla regilla*, and 1 lizard, *Phrynosoma blainvillii frontale*. Gift.

Bacon, Mr., of Hirsch and Kaye, San Francisco: 1 collection of shells, a portion of the collection made by Dr. R. E. C. Stearns, a former curator of the Department of Conchology of the Academy. Gift.

- Bailey, Geo. E., San Mateo, Calif.: 8 skulls and antlers of mammals from British East Africa. Gift.
- Barnes, Dr. William, Decatur, Ill.: 165 moths and 104 determined insects. Gift.
- Barnhart, P. S., La Jolla, Calif.: 1 fish, *Scorpaenichthys marmoratus*, from La Jolla. Gift.
- Bayerische Akademie der Wissenschaften, München, Germany: Wilkens, Alexander. Hugo von Seeligers Wissenschaftliches Werk. Exchange.
- Bernstein, Albert, San Francisco: 1 Rattlesnake, *Crotalus oreganus*, from Mt. Tamalpais, Marin County, Calif. Gift.
- Bird, Henry, Rye, New York: 22 insects. Gift.
- Bitting, Dr. A. W.: 2 pamphlets on Asparagus and Spinach by A. W. Bitting. Gift.
- Bittel, Walter, San Francisco: 1 frog, *Rana boylei boylei*, from Marin County, Calif. Gift.
- Blaisdell, Dr. F. E., San Francisco: 200 ferns from the collection of his mother, Mrs. Anna G. Blaisdell. Gift.
- Boatright, Charles, 534 Eleventh Ave., San Francisco: 1 Paradise Bird, *Vidua paradisaea*, in flesh; 1 Natal White-winged Whydah, *Penthetria albonotata*; 1 Gambel's Quail; 1 Lady Amherst's Pheasant; 2 Swinhoe's Pheasant; 1 Ornate Lory; and 1 Bleeding-heart Pigeon. Gift.
- Boone, Mrs. Richard G., Berkeley, Calif.: 5 Wheeling, W. Va., newspapers published in April, 1865. Gift.
- Booth, F. E., Woodland, Calif.: 1 partridge, *Arboricola gingica*, from Philippine Islands; and 1 Palawan Pheasant. Gift.
- Brenner, Mrs. Gustave, 1899 California Street, San Francisco: 2 shells from the Dead Sea, and 1 small box of marine shells from Algeria. Gift.
- British Museum of Natural History, London, England: 6 books and 1 pamphlet on various subjects. Exchange.
- Bull, Daniel B., 920 Kellar Ave., San Jose, Calif.: 30 specimens of birds from Central and South America; and 2 frogs from Argentina. Gift.
- Bureau of Biological Survey, U. S. Department of Agriculture, Washington, D. C.: 89 plumage ornaments (Birds of Paradise, Egret, Gaura, and Grebe). Gift.
- Burt, Charles E., Ann Arbor, Michigan: 19 snakes, 19 lizards, 2 turtles, 18 frogs, and 1 toad. Gift.
- Cabot, R., 351 Divisadero Street, San Francisco: 1 Red-tailed Hawk from San Francisco. Gift.

- California Division of Fish and Game, San Francisco: Fish Bulletin, nos. 2, 5-6, 8-9; 65 periodicals; 2 White-tailed Kites, from Solano County; 1 Whistling Swan from Ward Lakes, Lower Lake, Calif. Gift.
- Carnegie Institution of Washington, Washington, D. C.: 13 publications. Gift.
- Carnegie United Kingdom Trust, Edinburgh, Scotland: Lowe E. E., A Report on American Museum Work; Miers, Sir Henry, A Report on the Public Museums of the British Isles. Gift.
- Cavanaugh, James, Steinhart Aquarium, San Francisco: 9 copies of Police Journal, "2-0," Dec., 1927-Sept., 1928. Gift.
- Chambers, J. R., Año Nuevo Island, Calif.: 22 salamanders, *Aneides lugubris lugubris*, from Año Nuevo Island. Gift.
- Clark, H. Walton, California Academy of Sciences, San Francisco: 1 Pacific Rattlesnake, *Crotalus oreganus*, from 3 miles west of Calistoga, Calif.; 1 Hoary Bat, from Golden Gate Park; 1 lizard, *Gerrhonotus scincicauda scincicauda*, from San Bruno Hills, San Mateo; 58 periodicals. Gift.
- Close, Sir Chas., F. R. S., "Coytbury," St. Giles Hill, Winchester, England: 1 pamphlet on the Union Geographique Internationale. Gift.
- Colburn, Albert E., Los Angeles, Calif.: 1 snake, *Elaphe chlorosoma*, from Sonora, Mexico; 1 Dotted Burrowing Snake, *Chilomeniscus stramineus*, from Cape San Lucas, Lower California, Mexico. Gift.
- Comparative Zoology, Museum of, Cambridge, Mass.: 2 salamanders, *Scolecomorphus uluguruensis*, from Nyingwa, Uluguru Mountains, Tanganyika Territory. Exchange.
- Cowles, Thomas, California Academy of Sciences, San Francisco: 1 small box of shark teeth from Chesapeake Beach, Chesapeake Bay, Maryland. Gift.
- Dake, C. L., Rolla, Mo.: 1 geological pamphlet. Gift.
- Davidson, Mrs. M. E., California Academy of Sciences, San Francisco: Rules and Regulations of Sequoia and General Grant National Parks; Morrisson, A. Cressy, The League of Nations, Cartels and the Tariff; 72 periodical numbers. Gift.
- Davidson, Sam, 411 East Fourth Street, Tucson, Arizona: 1 Blackbird, *Agelaius phæniceus* subsp. from San Mateo Co.; 1 Fox Sparrow, *Passerella iliaca*, from San Mateo Co. Gift. 3 Kangaroo Rats from Fairbanks, Arizona. Exploration.
- Davis, A. C., Garden City, California: 115 miscellaneous insects. Gift.
- Davis, W. T., Staten Island, New York: 4 Cicadas. Gift.
- Dawson, Mrs. William Leon, Santa Barbara, Calif.: Museum of Comparative Oology Journal, vols. 1 and 2; The Comparative Oologist, vol. 1, no. 1. Gift.

- Degener, Otto C., 2220 Vancouver Highway, Honolulu, T. H.: 100 botanical specimens from the Hawaiian Islands. Purchase.
- Derby, Mrs. Charles, 488 Route C., San Jose, Calif.: 176 botanical specimens from Sequoia National Park, Tulare County, Calif. Gift.
- Deward, J. M., San Francisco: 1 Indian packamag? (Snake catcher). Gift.
- de Young, M. H., Memorial Museum, San Francisco: Zeitschrift für die gesamte Ornithologie, vol. 3, 4, 1886-1888; List of Echinoids in the Collection of the California Academy of Sciences, May, 1875; 1 mounted duck, *Anas platyrhynchos*. Gift.
- Direccion Oficial de la Obras Completas de Ameghino, La Plata, Argentina: 2 publications. Gift.
- Dinuba Fire Department, Dinuba, Calif.: 1 Desert Tortoise, *Gopherus agassizii*. Gift.
- Donor Unknown: 1 Desert Tortoise, locality unknown. Gift.
- Drake, Dr. Carl J., Iowa State College, Ames, Iowa: 64 aquatic insects. Gift.
- Dudley, Chester, Box 1331, Modesto, Calif.: 13 botanical specimens from Modesto. Gift.
- Eastwood, Miss Alice, California Academy of Sciences, San Francisco: 209 botanical specimens from near Covelo, Mendocino County; 78 from San Luis Obispo County; 35 from Del Norte County; 38 from Claremont, Calif.; 24 specimens of exotic plants; Edward Lee Greene, Illustrations of West American Oaks, 1889-90; Botanical Society of America, Pub. 91, 94; 38 miscellaneous periodicals. Gift.
- Evermann, Dr. Barton Warren, California Academy of Sciences, San Francisco; Filene, Edward A., Contributions of Research to Business; Proc. of Sixth Annual Meeting of the Western Psychological Assn., June 18 and 19, 1926; Exten. Service Bull. no. 139, Iowa State College of Agriculture and Mech. Arts; The Evils of Standardized Education, Burr; A Book List of a Small Museum of Natural Science by Pollard; U. S. Agri. Farm. Bull. 1575; Suggestions for the Library of a Small Museum of Art by Tuckerman; Southern Calif. Acad. Sci. Bull., vol. 25, tpg. ind.; vol. 26, tpg. ind.; vol. 27, part 2; 126 pamphlets; 278 periodicals; 2 books; 3 photographs. Gift.
- Facultad de Agronomia y Veterinaria, Universidad de Buenos Aires, Argentina: 1 pamphlet: Report 1928. Gift.
- Field Museum of Natural History, Chicago, Ill.: 1 copy, Field Museum and the Child. Chicago: 1928. Gift.
- Fitzhugh, William M., 2350 Broadway, San Francisco: 1 skull and horns of the Irish Elk, *Cervus giganteus*. Gift.

- Florida State Museum, Gainesville, Florida: 3 snakes, *Liodytes alleni*. Purchase.
- Folker, G. N., San Francisco, Calif.: 6 specimens of *Dendraster*, sea urchin. Gift.
- Foster, Miss L. S., Indio, Calif.: 1 Rattlesnake, *Crotalus oreganus*, from Indio. Gift.
- Gally, James, 340 Divisadero Street, San Francisco: Vererbung und Geschlechtsleben, Heft 2-4. Gift.
- Ghirardelli, Mrs. Domingo, Hillsboro, Calif.: 1 lizard, *Plestiodon skiltonianus*, from Hillsboro. Gift.
- Giffard, Walter M., P. O. Box 300, Honolulu, T. H.: 1331 insects, Delphacidæ. Gift.
- Gifford, E. W., Museum of Anthropology, University of California, San Francisco: 1 dove, *Phlogænas kubaryi*; 2 Cassin's Doves from Central America; 2 Panama Partridges; 2 Wood Ducks, *Aix sponsa*. Gift.
- Gorsuch, D. M., 526 So. Guthrie Street, Tulsa, Okla.: 74 bird skins from Arizona. Purchase.
- Grant, U. S., IV, Burlingame, Calif.: 2 pamphlets. Gift.
- Gray Herbarium, Harvard University, Cambridge, Mass.: Fernald, M. L., Unverified Geographic Ranges, from Science, August 17, 1928; 626 botanical specimens. Exchange.
- Green, Woodrow Wilson, 1235A 9th Ave., San Francisco: 1 Nuttall Sparrow from Golden Gate Park. Gift.
- Grout, A. J., 1 Vine Street, New Brighton, Long Island, New York: 25 specimens of mosses. Purchase.
- Haley, George, Berkeley, Calif.: 44 botanical specimens. Exploration.
- Hancock, Capt. G. Allen, Los Angeles, Calif.: 126 photographic prints of the Galapagos Expedition of 1927-1928. Gift.
- Hancock Galapagos Expedition: 20 land iguanas from Seymour Island; 21 sea iguanas, 7 crawfish and 5 fishes (3 species) from Tagus Cove, Albe-marle Island, Galapagos; 1 lizard (*Anolis townsendi*), from Cocos Island; 27 lizards (*Anolis agassizii*) and 10 Skinks, new species, from Malpelo Island; 17 lizards from Tres Mariettas Islands; 4 rock iguanas, accessory material from Isabel Island; 15 eggs, from Isabel, White Friar, and Tower islands; 12 birds, in flesh, from Cocos, Malpelo, and Galapagos islands. Exploration.

- Hanna, Dr. G. Dallas, California Academy of Sciences, San Francisco; 1 small lot of *Pedipes* from Bolinas Bay, Calif., Exploration; 1 snake from Lake County; Gift; 1 tree frog, *Hyla regilla*, from Siskiyou County. Exploration; 125 pamphlets and 4 books, mostly on geological subjects; Bull. U. S. Fish Comm., vol. 23, 1903, pt. 3, 1906; Heiden, Heinr. & R. W. Kolde: Die Marinen Diatomeen der Deutschen Südpolar-Expedition 1901-1903; 1 map of San Francisco by Harrison Godwin. Gift.
- Hart, Cecil, Montebello, Calif.: 13 botanical specimens from southern California. Gift.
- Harter, Mildred E., Lindsay, Calif.: 28 botanical specimens from Lindsay. Gift.
- Henderson, J., New Zealand Geological Survey, Wellington, N. Z.: 1 copy each of N. Zealand Jour. Sci. and Tech., vol. 6, nos. 2 and 3. Gift.
- Henderson, Prof. L. F., Agricultural College, Eugene, Ore.: 46 botanical specimens from Oregon. Purchase.
- Hendrick, Russell, California Academy of Sciences, San Francisco: 3 Brandt Cormorant, 2 Ancient Murrelet, 1 Black Oystercatcher, and 1 weasel. Exploration.
- Herrin, Miss Katherine: 11 pamphlets on botanical subjects. Gift.
- Herrin, William Franklin, San Francisco: Curtis's Botanical Magazine, vols. 148-151, vol. 152, nos. 1, 3, 1922-28. Gift.
- Hertlein, Leo George, California Academy of Sciences, San Francisco: San Diego Natural History, Museum Bulletin, nos. 48-50, 1928; 2 geological pamphlets; Preliminary Report on the Paleontology of the Channel Islands, California, by Hertlein; Sanford, O. N., Price list of West Coast Shells. Gift.
- Hing, J. C., 843 Clay Street, San Francisco: 6 dried starfish, two species; 1 dried skin of salmon. Gift.
- Hodson, L. H., Sausalito, California: 1 Gila Monster, from Florence, Arizona. Gift.
- Holm, Adolph, R. G. D. Box 146, Redwood City, Calif.: 1 California Shrew Mole from south arm of Portola Valley, San Mateo County, Calif.; 2 shrews from 5 miles west of Stanford University; 1 shrew from Santa Clara County, Calif. Gift.
- Illinois State Geological Survey, Urbana, Illinois: 2 pamphlets on engineering subjects. Gift.
- Institut Geologic al Romaniei, Bucharest, Roumania: Roman, David & Alexandru Codarcea. Bibliographia Geologica a Romaniei. Exchange.
May 22, 1929

- Iowa, State University of, The University Libraries, Iowa City, Iowa: MacBride, Thomas H., In Cabins and Sod-houses. 1928. Gift.
- Johnston, E. C., Petaluma, Calif.: Collection of botanical specimens, photographs, and plants of the Pribilof Islands. Gift.
- Kahn, Mrs. Florence Prag, San Francisco: Congressional Directory, 70th Congress, 1st Session. Gift.
- Keifer, H. H., Capitol Building, Sacramento, Calif.: 11 botanical specimens from Marysville Buttes; 1 snake, *Bascanion constrictor vetustum*, from Oroville, Calif. Gift.
- Klauber, L. M., San Diego, Calif.: 2 lizards from San Diego County. Gift.
- Kruger, C. E., Laurel Hill, Bush and Presidio Ave., San Francisco: 1 Aztec Thrush, *Ridgwayia pinicola*, in flesh. Gift.
- Kryshtofovich, A., Geological Committee, Leningrad, Russia: 5 separates on geological and mineralogical subjects. Gift.
- Kundson, Mrs.: 1 lot of shell, rocks, and miscellaneous curios with cabinet. Gift.
- Kusche, J. A., Hollywood, Calif.: 6399 miscellaneous insects; 33 bird skins and 11 mammal skins from Arizona. Purchase.
- Lastreto, C. B., San Francisco: 18 pamphlets and 35 periodicals on various subjects. Gift.
- Lawrence, H. M., 1111 Pine Street, San Francisco: 20 numbers of the National Geographic Magazine. Gift.
- Leach, E. R., Piedmont: 1 snake, *Charina bottæ*, from Mendocino County, Calif. Gift.
- Library of Congress, Washington, D. C.: Library of Congress. Classification, class P:P-PA. Washington: 1928. Exchange.
- Lincoln, George S., 185 Eighth Ave., San Francisco: 1 small plate and 2 decorative spoons. Gift.
- Linsley, Gorton, Oakland, Calif.: 121 miscellaneous insects; 200 European Coleoptera. Gift.
- Los Angeles Board of Public Works, Los Angeles, Calif.: Hales, George P. Los Angeles City Hall. Gift.
- Maggio, Mrs. E. F., 1560 Lombard Street, San Francisco: 1 Western Red Bat from San Francisco. Gift.

- Mailliard, Joseph, California Academy of Sciences, San Francisco: 1 Barn Owl, female, and 1 Red-tailed Hawk, male. Gift. 1 Burrowing Owl and 1 White-throated Sparrow from Marin County, Calif.; 109 mammal skins and skulls and 319 bird skins and 2 sets of eggs from British Columbia; 6 mammal skins and skulls and 71 bird skins from Sonoma County, Calif. Exploration.
- Martin, J. O., Berkeley, Calif.: 1262 miscellaneous insects. Exploration. 2092 miscellaneous insects and 205 moths. Gift.
- McAllister, M. Hall, 2436 Jackson Street, San Francisco: Scientific American, April, May, June, 1928; 11 pamphlets and 13 periodical numbers. Gift.
- McLaren, John, Golden Gate Park, San Francisco: 1 White-fronted Parrot, 1 American Barn Owl, and 1 Black Bear cub, from Golden Gate Park. Gift.
- Mechanics Library, 57 Post Street, San Francisco: Periodical List, Mechanics Library, San Francisco. Gift.
- Merrill, Dean E. D., University of California, Berkeley, Calif.: 709 botanical specimens, collected by Capt. and Mrs. Clemens in China. Purchase. 316 specimens of Chinese plants. Exchange.
- Meyer, Harry, 1116 Financial Center Building, San Francisco: 1 Western Red-tailed Hawk (*Buteo borealis calurus*), from Salmon River, Calif. Gift.
- Mexia, Mrs. Ynes, 1909 Lake Street, San Francisco: 1286 botanical specimens from Mexico. Purchase.
- Michigan, University of, Zoological Laboratory, Ann Arbor, Michigan: 6 pamphlets on zoological subjects. Exchange.
- Minister of Lands and Forests, Province of Quebec, Canada: 1 copy of Guide to the City of Quebec, 33rd edition, 1924. Gift.
- Moffitt, James, 1879 Broadway, San Francisco: 1 Brandt's Cormorant from Marin County, Calif. Gift.
- Montgomery, A. C., S. S. Montagu, San Francisco: 4 birds, in flesh, from China. Gift.
- Mori, T., 1511 Geary Street, San Francisco: 1 Budgerygah (*Melopsittacus undulatus*), from Australia; 2 Button Quail (*Turnix*), from the Philippine Islands. Gift.
- Morrice, Charles M., Bakersfield, Calif.: 2 boxes of fossil bones. Gift.
- Museum of the American Indian (Heye Foundation), New York: 4 periodical numbers. Gift.
- Nast, E. H., San Francisco: 65 moths. Gift.
- Naturforscher-Verein zu Riga, Riga, Latvia: 2 publications. Exchange.

- Naturwissenschaftlicher Verein für Steiermark, Graz, Austria: 1 book: Sölch, Joh., Die Landformung der Steiermark. Graz, 1928. Gift.
- North Carolina Department of Conservation and Development, Raleigh, N. C.: Dept. of Conserv. & Devel., N. Carolina, Bull. no. 35, Jul., 1927; N. Carolina Geol. & Econ. Survey, vol. 2, 1907. Gift.
- Oakland Free Library, Oakland, Calif.: Summary report of a survey of the Oakland Public Library, April, 1927. Gift.
- Oberman, J. M., Mt. Shasta City, Calif.: 1 skeleton of Mule Deer from Mt. Shasta. Gift.
- Observatoria Nacional, Rio Janeiro, Brazil: Calculo do nascer do occaso da lua, Rio de Janeiro. Gift.
- Oil Bulletin, Los Angeles, Calif.: Oil Bull. for December, 1927, containing "Geological Sketch of Santa Rosa Island, Santa Barbara County, California" by William S. W. Kew. Gift.
- Oliveira, Euzebio Paulo de, Director, Geological and Mineralogical Survey, Rio Janeiro, Brazil: Oliveira, Euzebio Paulo de, O que faz o servico geologico. Gift.
- Otis, J. C.: 4320 1st Ave., N. E., Seattle, Washington: 48 specimens of grasses and sedges. Gift.
- Pack, Herbert J., Utah Agricultural Experiment Station, Logan, Utah: 34 fishes (*Cottus beldingi*), various sizes, from Logan, Utah. Gift.
- Parodi, Prof. Lorenzo R., Universidad de Buenos Aires, Buenos Aires, Argentina: 2 agricultural pamphlets. Gift.
- Patton, J. V., Hollister, Calif.: 3 partridges (*Arboricola crudigularis*), and 4 other birds. Gift.
- Peers, Susie M., California Academy of Sciences, San Francisco: Current issues of Science for 1928; 1 copy San Francisco Chronicle, April 22, 1906. Gift.
- Pell, R. C., and Thomas F. Jones: Two fishes (*Hexanchus corinus*), from Sausalito, Calif. Gift.
- Phillips, Warren, Game Warden, Golden Gate Park, San Francisco: 1 White-tailed Kite from Sebastopol, Calif. Gift.
- Plummer, V. J., 3100 Wabash, Fort Worth, Texas: 22 samples of ocean dredgings. Purchase.
- Proefener, John, 3709A 16th Street, San Francisco: 4 bound volumes. Gift.
- Quaeris, Q. M., 132 Boulevard Mitiaire, Brussels, Belgium: Quaeris, Q. M., Notre Misère Scientifique; ses Causes; ses Remèdes. 1928. Gift.

- Reagan, Albert B., Queets River Day School, Queets, Washington: 10 botanical specimens from Arizona. Gift.
- Rixford, G. P., 1813 Pierce Street, San Francisco: 27 bound volumes of U. S. Reports. Gift.
- Rijks Herbarium, Leiden, Holland: Suringar, J. Valckenier, Nieuve Planten II. 1927. Exchange.
- Robison, Ansel W., 1072 Market Street, San Francisco: 2 birds from Palawan and China; 2 birds from Colombia; 4 birds; 1 Koala (*Phascolarctus cinereus*), from Australia. Gift.
- Rodda, Mrs. Annie F., 2616 Sacramento Street, San Francisco: 1 specimen of echinoderm; 12 botanical specimens from Death Valley, Calif. Gift.
- Royal Geographical Society of Australia, Brisbane, Australia: Reports of the Great Barrier Reef Committee, vol. 1, 1925. Gift.
- Royer, J. S., 870 Lombard Street, San Francisco: 1 small box of shells from Midway Island. Gift.
- Ruthing, Paul, Guadalajara, Mexico: 8 snakes, 2 lizards, 15 toads, and 15 frogs from Mexico. Gift.
- San Diego Society of Natural History, San Diego, Calif.: Wright, W. S., The Desert Palm. Nat. Stud. Leaf. San Diego Nat. Hist. Soc. Exchange.
- Sanford, Mrs. O. N., San Francisco, Calif.: 6 boxes of fossil and recent shells; 32 books and pamphlets on various subjects. Gift.
- San Francisco Aquarium Society, San Francisco: 4 periodical numbers. Gift.
- Schlesch, Dr. Hans, Cand Pharm., Gustavadolfstrade 14, Copenhagen, Denmark: 1 lot of shells from Greenland. Exchange.
- Schoenfeld, Mrs. Jonas, 2238 Pacific Ave., San Francisco: 1 German soldier's helmet; 1 Emu egg; 2 bridle bits, 1 fork, 1 spoon, and a piece of melted glass from the San Francisco fire of 1906; 2 souvenir straight edges from Germany; 1 book of pressed flowers from Jerusalem; 2 small silk tapestries; 5 pictures of the Albert Memorial in England; 1 war-time picture of U. S. Officers; 1 bead-covered bottle; 5 rifle shells; C souvenir pins of the St. Louis Exposition of 1904; 1 souvenir badge with pictures of the Kings of Germany in 1871; 1 basket decorated with shell designs; 1 carved wood pen holder; 4 buttons made from some sort of nut or seed; 2 mounted deer heads; 1 box of sea shells, mostly exotic species. Gift.
- Science News-letter, Washington, D. C.: Science News-letter, Nov. 24, 1928. Gift.
- Scullen, Prof. H. A., Oregon State Agricultural College, Corvallis, Oregon: 9 insects. Gift.

- Seabra, de, A. F., University, Coimbra, Portugal: 3 separates written by donor. Gift.
- Servios Geologicos, Lisbon, Portugal: Choffat, Paul, Cartas e Córtes Geológicas. Exchange.
- Shaw, T. H., Peking, China: 1 frog (*Rana nigromaculata*), and 1 lizard (*Gecko swinhonis*), from campus of Tsing Hua College, Peking, China. Gift.
- Silvey, James J., San Francisco: 1 seal, mounted. Gift.
- Slason, Thompson, Bureau of Railway News & Statistics, Chicago: Railway Statistics of the U. S. of A. for the year ended December 31, 1927. Gift.
- Slevin, Louis S., Carmel, Calif.: 1 salamander (*Ensatina eschscholtzii*), from Carmel; 5 salamanders from Carmel; 255 moths and 96 miscellaneous insects. Gift.
- Smith, L. S., Forest Service, Tahoe District, Calif.: 26 botanical specimens from Nevada County, Calif. Gift.
- Smith, Raymond L., California Academy of Sciences, San Francisco: 1 Nuttall Sparrow from Golden Gate Park; San Francisco. January, 1926. Gift.
- Soldatov, Prof. V. K., Through U. S. S. R. Society of Cultural Relations with Foreign Countries, Moscow, U. S. S. R.: Soldatov, V. K., Note on Two Little Known Genera and Species from Shantar Islands, Okhotsk Sea. Gift.
- Steinbeck, Mr. J. W., 611 Bristol Ave., Stockton, Calif.: 2 Cuckoo Doves from the Philippine Islands; 1 White-bellied Plumed Pigeon and 1 Cabot's Tragopan. Gift.
- Steinhart Aquarium, Golden Gate Park, San Francisco: 2 skulls of Steller Sea Lion and 3 Steller Sea Lions, in flesh (2 immature) from Año Nuevo Islands, California; 1 Spoon-bill Duck, from Golden Gate Park; 70 salamanders and 57 frogs from Lagunitas, Calif.; 32 fishes (21 species), from various localities. Gift.
- Stevens, J. B., Fellows, Calif.: 2 samples of Tulare Pliocene well cores. Gift.
- Stolz, Mrs. F. L., 1800 Broadway, San Francisco: 1 bead weaver's bow loom with bead work on it by Susan Jackson, Tahoe, California; 3 mats from Niihau Island and 1 piece of tapa cloth. Gift.
- Strecker, John K., Waco, Texas: 526 specimens of reptiles and amphibians from various parts of the United States. Gift.
- Suksdorf, Wilhelm, Bingen, Washington: 400 botanical specimens from Oregon and Washington. Purchase.
- Sullivan's Pet Shop, 1240 Market Street, San Francisco: 1 parrot (*Psephotus haematonotus*) from Australia; 1 Rosella (*Platycercus eximius*) from Australia. Gift.

- Swarth, H. S., California Academy of Sciences, San Francisco: 4 bird skins from Arizona. Exploration. 92 photographic negatives and 23 prints, mostly trees; Jour. Mus. Comp. Oology, vol. 1, no. 3-4; vol. 2, no. 3-4; 28 periodicals, 5 separates, and 1 book by Rawstorne, Lawrence, Gamonia. London: 1905. Gift.
- Swezey, O. H., H. S. P. A. Experiment Station, Honolulu, T. H.: 128 North American Delphadids. Gift.
- Tanner's Council of America, 41 Park Row, N. Y.: Dictionary of Leather Terminology. Gift.
- Thompson, Leslie, Carmel, Calif.: 1 Boyles' Milk Snake from Carmel Valley, Monterey County, Calif. Gift.
- Tose, Frank, California Academy of Sciences, San Francisco: 3 water snakes from Creston, British Columbia, Canada; 1 Western Gull, 1 Black-crowned Night Heron, 2 Kildeers, 1 Coot, 1 California House Finch, 1 Pied-billed Grebe, 1 Murre, 1 Audubon Warbler from vicinity of San Francisco; 11 bird skins from Marin County; 1 copy Museum Craft, July 16, 1928. Gift.
- Trost, H., deYoung Memorial Museum, Golden Gate Park, San Francisco: 1 snake (*Diadophis amabilis*), from Cloverdale, Calif. Gift.
- Tucumán, Universidad Nacional, Mexico City, Mexico: 13 periodical numbers. Exchange.
- United States National Park Service, San Francisco: 16 periodical numbers. Gift.
- Universidad Nacional de Tucumán, Buenos Aires, Argentina: Lafone Quevedo, Samuel A., Tesoro de Catamarqueñismos. Buenos Aires. 1927; Borda, Manuel Lizondo, Historia de la Gobernación del Tucumán. 1928. Gift.
- Vanadium Corporation of America, 120 Broadway, New York City: Simonds, Herbert R., Manufacturers' Research Broadens Use of Alloy Steels. Reprint from Iron Trade Review, Sept. 27, 1928; Automotive Springs, 1928. Gift.
- Van Duzee, E. P., California Academy of Sciences, San Francisco: Pennsylvania Agri. Exper. Sta., 41st Annual Report, 1927-1928; 2 pamphlets and 3 periodical numbers. Gift. 402 miscellaneous insects. Exploration.
- Van Duzee, M. C., 12 Abbotsford Place, Buffalo, New York; 9 Diptera. Gift.
- Van Dyke, Dr. E. C., 2440 Stuart Street, Berkeley, Calif.: 1 *Myotis*, in flesh, from Alameda County, Calif.; 5 salamanders from California; 3 small lots of land shells from Coachella, Carpenteria, and Big Basin State Park, California; 2094 miscellaneous insects. Gift.

- Van Dyke, Mrs. E. C., 2440 Stuart Street, Berkeley, Calif.: 282 botanical specimens from southern California. Gift.
- Venturi, S., Tucumán, Argentina: 451 botanical specimens from Argentina. Purchase.
- Viosca, Percy, New Orleans, Louisiana: 143 cricket frogs, 106 toads, 143 tree frogs, 3 species, from Louisiana. Purchase.
- Vortriede, William, State Gardener, Capitol Park, Sacramento, Calif.: 136 botanical specimens from Sacramento and El Dorado counties, and 85 specimens from the Tahoe Region. Gift.
- Walker, Winslow M., University of California, Berkeley, Calif.: Pipe from Nushagak, Alaska, brought in 1925 by Wesley F. Walker, 1525 Eighth Avenue, San Francisco. Gift.
- Walther, Eric, Golden Gate Park, San Francisco: 241 specimens of exotic plants. Gift.
- Wheeler, Dr. W. M., Bussey Institute, Forest Hills, Boston, Mass.: 267 ants. Gift.
- Wilder, H. E., Carlotta, Humboldt County, Calif.: 1 Flying Squirrel from Humboldt County, Calif. Purchase.
- Wilip, J., Tartu-Dorpat, Esthonia: 2 seismological publications. Gift.
- Williams, F. X., Honolulu, T. H.: 1 salamander (*Oedipus* sp.), from Para, Brazil. Gift.
- Winterhalter, W. K., 2211 Buchanan Street, San Francisco: 1 bottle containing some stones and chips of wood; 2 whale centrum vertebræ; 2 model Eskimo kayaks; 2 arrows and a leather pouch from Alaskan Indians; 12 cross-sections of various woods; 1 wooden bottle from Hungary; 1 pair of Elk antlers detached from skull; 5 pieces of paper cloth, 1 paper suit, and 1 pair of wooden soled shoes of German war-time make. Gift.
- Wright, Mrs. Dora E., San Francisco, Calif.: 2957 Chinese insects. Purchase.
- Wright, J. T., San Francisco, Calif.: 14 snakes, 92 lizards, and 10 frogs from Chekiang Province, China. Purchase.
- Yale University, Bingham Oceanographical Collections, New Haven, Conn.: 8 periodical numbers. Gift.
- Yalta, Crimea, Government Botanical Gardens: 1 botanical publication. Exchange.
- Zoologisk Museum, Oslo, Norway: 2 pamphlets on Ornithology. Exchange.

ACKNOWLEDGMENTS

In the past year many courtesies have been extended to the Academy by individuals and institutions that are interested in what we are doing for the community and the entire Pacific Coast in scientific research and educationally.

First of all our appreciation must be acknowledged of the kindness shown by those who gave one or more lectures in our Sunday afternoon free lecture course and at the regular stated Academy meetings.

Grateful thanks are also due the large number of friends who have donated specimens or books to the Museum or the Aquarium. The Southern Pacific Company, the Atchison, Topeka, and Santa Fé Railway System, the Matson Navigation Company, and the Los Angeles Steamship Company, have each continued their interest in the scientific and educational activities of the Academy, and each has extended many courtesies to the Academy and members of the Museum and Aquarium staffs that have aided us greatly in our field work. Without their cooperation so generously given our work in building up the Museum and Aquarium exhibits and study collections would have been seriously hampered.

FINANCIAL STATEMENTS

REPORT OF THE TREASURER

For the fiscal year ending December 31, 1928

January 1, 1928, Balance due Crocker First National Bank.... \$ 4,133.96

Receipts:

Dues.....	\$ 3,665.00
Charles Crocker Scientific Fund Endow- ment Income.....	1,719.75
James Lick Endowment Income.....	69,211.63
General Income.....	18,991.90
John W. Hendrie Endowment Income.....	1,005.00
Publication.....	503.30
Interest.....	1,033.46
Ignatz Steinhart Trust Interest.....	657.25
Post Card Sales.....	1,041.04
Southern Counties Gas Company of California (Bond Sale).....	100.00
Bills Receivable.....	13,000.00
W. G. Wright Fund.....	10.00
Duplicate Sales Account.....	23.80

Total Receipts..... \$110,962.13

\$106,828.17

REPORT OF THE TREASURER—Continued

Expenditures:

Interest.....	\$ 11,391.15
Contingent Fund.....	554.59
Salary Expense General.....	19,481.07
Museum Department Salaries.....	20,424.04
Museum Department Appropriations.....	12,371.36
Bills Payable.....	10,000.00
Bills Receivable.....	10,000.00
Earthquake Insurance Sinking Fund.....	1,200.00
Insurance.....	1,295.45
American Trust Company Stock.....	6,471.50
Wild Life Protection Fund.....	159.25
Sundry Creditors.....	1,188.87
Expense.....	2,696.41
Library.....	4,761.00
Publication.....	8,616.04
Total Expenditures.....	<u>\$110,610.73</u>

January 1, 1929, Balance due Crocker First National Bank.... \$ 3,782.56

M. HALL McALLISTER, *Treasurer.*

Examined and found correct,

McLAREN, GOODE & Co., *Certified Public Accountants.*

San Francisco, Calif., February 18, 1929.

INCOME AND OPERATING EXPENSES

For the fiscal year, January 1, 1928, to December 31, 1928.

Income:

Charles Crocker Scientific Fund Endow- ment Income.....	\$ 1,719.75	
James Lick Endowment Income.....	69,211.63	
General Income.....	18,991.90	
Dues.....	3,764.00	
Interest from Temporary Investments....	1,033.46	
Profit on Post Card Sales.....	610.55	
	<hr/>	
Total Income.....		\$ 95,331.29

Expenditures:

General Expense.....	\$ 2,755.56	
Salaries.....	39,958.86	
Interest.....	11,391.15	
Insurance.....	1,295.45	
	<hr/>	
Total Expenditures.....		\$ 55,401.02
		<hr/>
Net Income Transferred to Surplus Account.....		\$ 39,930.27

SUMMARY OF SURPLUS ACCOUNT

December 31, 1928

Balance January 1, 1928.....	\$520,625.92
<i>Additions:</i>	
Net Income for the year ended December	
31, 1928.....	\$ 39,930.27
Sale of duplicate books.....	23.80
Income from John W. Hendrie Trust.....	1,965.00
	<hr/>
Total Additions to Surplus.....	\$ 41,919.07
	<hr/>
	\$562,544.99
 <i>Deductions:</i>	
De Vry Motion Picture camera lost at sea..	\$ 147.00
Depreciation.....	15,866.46
	<hr/>
Total Deductions from Surplus.....	\$ 16,013.46
	<hr/>
Surplus, December 31, 1928.....	\$546,531.53

BALANCE SHEET

December 31, 1928

*Assets**Property:*

Real Estate, 831-833 Market Street.....	\$600,000.00
Commercial Building, 833 Market Street.....	516,818.66
Real Estate, Jessie Street.....	8,083.65
	<hr/> \$1,124,902.31

Museum, Golden Gate Park:

Building Construction.....	\$192,025.92
General Collections.....	190,431.72
Library and Equipment.....	139,452.21
Tools and Equipment.....	44,140.73
Office Furniture.....	5,287.06
	<hr/> \$ 571,337.64

Investment Securities..... \$ 26,090.58

Ignatz Steinhart Trust:

Bills Receivable.....	\$ 12,000.00
Steinhart Aquarium Construction.....	263,390.29
Steinhart Aquarium Equipment.....	27,129.87
Steinhart Aquarium Revolving Fund.....	5,000.00
Uninvested cash on hand.....	270.62
	<hr/> \$ 307,790.78

Current Assets:

Bills Receivable.....	\$ 10,000.00
Post Cards in stock.....	594.08
Cash on hand.....	156.90
Sundry Accounts.....	100.00
	<hr/> \$ 10,850.98

Total.....\$2,040,972.29

BALANCE SHEET—Continued

*Liabilities**Endowments:*

James Lick Endowment.....	\$804,902.31	
Charles Crocker Scientific Fund Endowment...	20,000.00	
John W. Hendrie Endowment.....	13,600.00	
		<hr/>
		\$838,502.31

Funds Held for Special Purposes:

Alvord Bequest Botanical.....	\$ 5,000.00	
Earthquake Insurance Sinking Fund Income...	269.08	
W. G. Wright Fund.....	31.54	
Henry M. Holbrook Bequest.....	25.28	
Park Birds Handbook Fund.....	20.00	
Wild Life Protection Fund.....	69.91	
		<hr/>
		\$ 5,415.81

Reserve for Depreciation..... \$133,553.02

Ignatz Steinhart Trust:

Principal.....	\$250,000.00	
Interest.....	57,790.78	
		<hr/>
		\$307,790.78

Notes and Accounts Payable:

Bills Payable.....	\$205,000.00	
Accounts Payable, Sundry Trade Creditors....	125.66	
Due Crocker First National Bank (Overdraft).. <td>3,782.56</td> <td></td>	3,782.56	
Due Ignatz Steinhart Trust.....	270.62	
	<hr/>	\$209,178.84

Surplus..... \$546,531.53

Total.....\$2,040,972.29

SUSIE M. PEERS,
Secretary, Board of Trustees.

We have examined the foregoing Balance Sheet, together with the books and accounts of the California Academy of Sciences, and in our opinion, it is properly drawn up so as to exhibit a true and correct view of the Academy's affairs, as shown by the books.

McLAREN, GOODE & CO.,

Certified Public Accountants.

San Francisco, Calif.,
February 18, 1929.

